WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
IDAHO

UNITED STATES DEPARTMENT of AGRICULTURE···SOIL CONSERVATION SERVICE,
and
IDAHO STATE RECLAMATION ENGINEER

Data included in this report were obtained by the agency named above in cooperation with the Comptroller of Water Rights of British Columbia, and Federal, State and private organizations listed on the last page of this report.

AS OF
APR. 1, 1963

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Water Supply Outlook Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from advance estimates of the streamflow.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, up to 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

Streamflow forecasts are obtained by a comparison of total or maximum snow accumulation, as measured by snow water equivalent, to the subsequent spring and summer or snowmelt season runoff over a period of years. The snow water equivalent measured in selected snow courses provides most of the index to the streamflow forecast for the following season. More accurate forecasts are usually obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast procedure. Early season forecasts assume average climatic conditions through the snowmelt season.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions. Soil Conservation Service Reports may be secured from Water Supply Forecasting Unit, Soil Conservation Service, P.O. Box 4170, Portland 8, Oregon.

PUBLISHED BY SOIL CONSERVATION SERVICE

REPORTS	ISSUED	LOCATION	COOPERATING WITH
RIVER BASINS			
WESTERN UNITED STATES	MONTHLY (FEB.-MAY)	PORTLAND, OREGON	ALL COOPERATORS
STATES			
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NEVADA	MONTHLY (JAN.-MAY)	RENO, NEVADA	NEVADA DEPT. OF CONSERVATION AND NATURAL RESOURCES - DIVISION OF WATER RESOURCES
OREGON	MONTHLY (JAN.-JUNE)	PORTLAND, OREGON	OREG. STATE UNIVERSITY OREGON STATE ENGINEER
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WYOMING	MONTHLY (FEB.-JUNE)	CASPER, WYOMING	WYOMING STATE ENGINEER

PUBLISHED BY OTHER AGENCIES

REPORTS	ISSUED	AGENCY
BRITISH COLUMBIA	MONTHLY (FEB.-JUNE)	WATER RIGHTS BR., DEPT. OF LANDS, FORESTS AND NATURAL RESOURCES, PARLIAMENT BLDG., VICTORIA, B.C., CANADA
CALIFORNIA	MONTHLY (FEB.-MAY)	CALIF. DEPT. OF WATER RESOURCES, P.O. BOX 388, SACRAMENTO, CALIF.

USDA SCS PORTLAND OREG 962

WATER SUPPLY OUTLOOK and SNOW SURVEYS - IDAHO

IMPORTANT NOTICE

If you wish to continue to receive the attached Water Supply Outlook and Snow Survey reports, please sign and return the lower portion of this form.

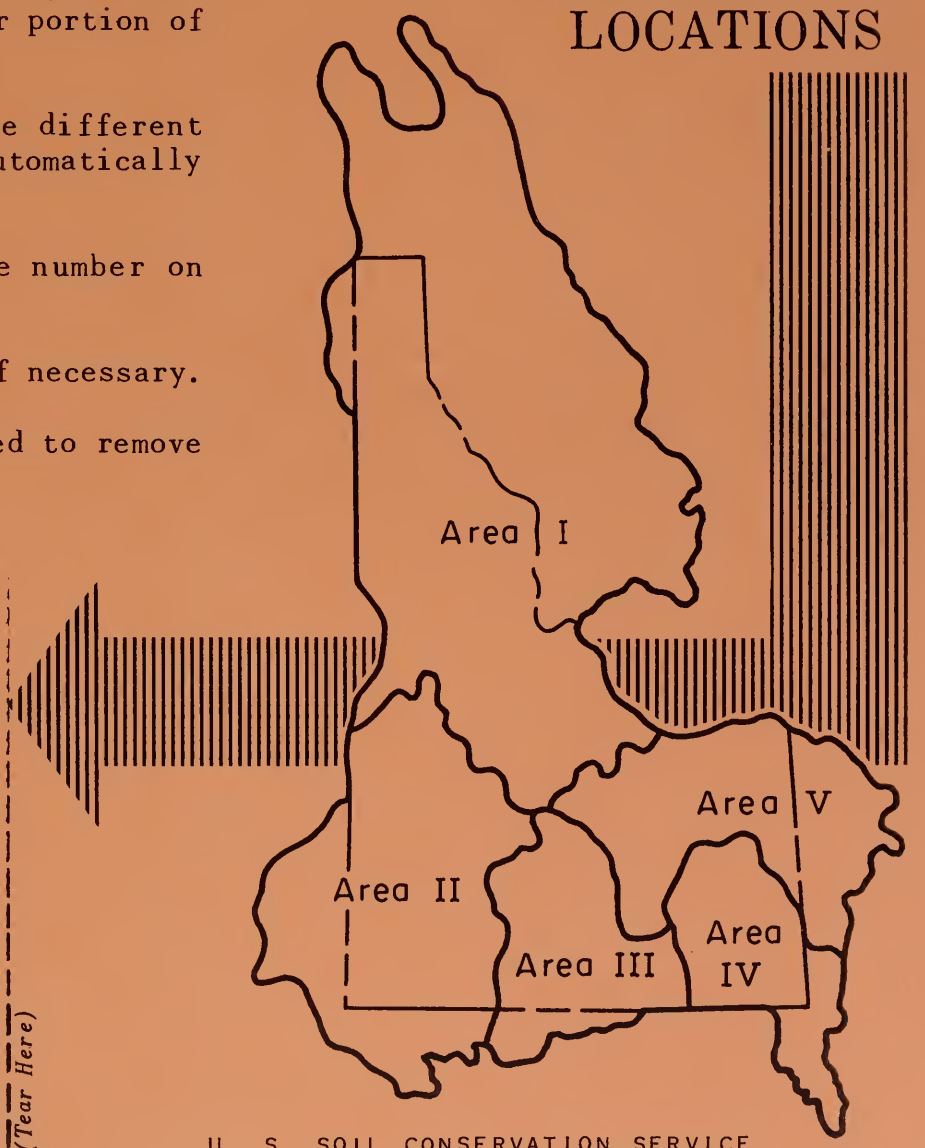
Check the report or reports desired (✓). If two or more different area reports are marked, the state report will be sent automatically unless specifically indicated otherwise on the card.

If two or more of the same report are desired, place number on card. (3)

Check your address on reverse side of card and correct if necessary.

If this card is not returned in *30 DAYS* we are required to remove your name from the free mailing list.

WATERSHED LOCATIONS



U. S. SOIL CONSERVATION SERVICE
P. O. Box 1247
Boise, Idaho

(Tear Here)

WATER SUPPLY OUTLOOK and SNOW SURVEYS - IDAHO

Area Reports Issued February, March, April, May.
State Report Issued January, February, March, April, May, June.

( ) AREA I — Kootenai, Pend Oreille, Spokane, Palouse, Clearwater, Salmon Watersheds

( ) AREA II — Boise, Payette, Weiser, Bruneau, Owyhee Watersheds

( ) AREA III — Snake, Big Wood, Little Wood, Raft, Goose Creek, Salmon Falls Creek Watersheds

( ) AREA IV — Upper Snake, Blackfoot, Portneuf, Bear, Malad Watersheds

( ) AREA V — Upper Snake, Henry's Fork, Teton, Camas-Beaver Creek, Little Lost, Big Lost, Upper Salmon Watersheds

( ) IDAHO — Includes All Above Reports and Other Data

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Snow Surveys Section
P. O. Box 1247
Boise, Idaho

WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
IDAHO

Report prepared by

MORLAN W. NELSON Snow Survey Supervisor

and

J. ALDEN WILSON Asst. Snow Survey Supervisor

SOIL CONSERVATION SERVICE
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Issued by

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BOISE, IDAHO

GEORGE N. CARTER
STATE RECLAMATION ENGINEER
DEPARTMENT OF RECLAMATION
BOISE, IDAHO

WATER SUPPLY OUTLOOK for IDAHO

GENERAL SUMMARY - APRIL 6, 1963

The outlook for streamflow in the 1963 irrigation season is one of the poorest ever recorded in Idaho. The rivers with adequate storage facilities and good carry-over water can make up for the low streamflow by heavy drafts on stored water. The main stem of the Snake, Boise, Payette, and Big Wood Rivers have excellent reserves of stored water for this season, but carry-over into the 1964 season may be low. The smaller rivers throughout Idaho not having good storage facilities are forecast to have critical water shortages during this season. There is still a remote possibility that heavy rains during April could change this outlook slightly.

Snowfall, during the 1963 season, has been one of the lightest ever recorded in Idaho. Fall and winter precipitation has also been below normal, resulting in the soil beneath the snow pack being unusually dry. The high elevation snow courses have a better snow pack in relation to normal than the low and medium sites. The south slopes are either entirely bare of snow or have new snow that will melt in a few days of warm weather.

The various ranges of mountains south of the Snake River along the entire southern edge of the state have the lightest snow pack ever recorded except on a few snow courses. In general, the area of snow cover that contributes to streamflow is unusually small this season. The bare south slopes and high snow line are expected to reduce streamflow more than indicated by the snow course measurements.

Soil moisture measurements taken at approximately forty sites throughout the

state continue to show an unusual pattern of soil moisture. The high elevation sites are unusually dry as a result of the dry fall in 1962 and the fact that the major snow-melt has not started. The middle elevation sites have soil that is partially primed by rain and melting snow and has already began to dry out. Valley soil conditions in our irrigated areas are also unusually dry and irrigation water has been turned on in many places in order to prepare seed beds with enough moisture to germinate the crops planted. In many of our watersheds, the lower elevation soil moisture deficiencies are so great that the entire snow pack existing at this time can be absorbed by the soil. The dry soil in general increases the critical nature of the low water supply outlook for 1963.

In general, the prospects for streamflow appears similar to the dry years of the thirties, and water users are encouraged to carry over as much water into the 1964 season as possible. Water users, without storage facilities, have been encouraged to stretch limited water supplies in every way possible. Technical suggestions covering these points are included in this report.

CROPPING TIPS FOR WATER CONSERVATION

by
Luther Jones, State Soil Conservationist
Soil Conservation Service

If you are faced with a water shortage this year, the following are some points you may wish to consider.

1. If you have to cut down on acreage, select the fields with good, deep medium-textured soils to use for crop production. Good soils will make better use of the water available. The SCS technician in your SCD will help you select the best soils.

2. Plant a smaller acreage of heavy water-using crops such as sugar beets.

3. Substitute cereal grains of wheat, oats, or barley for heavy water-using crops.

4. Delay establishment of hay stands until year with favorable water.

5. Use a minimum number of shallow tillage operations to conserve winter moisture, when preparing a seedbed. A good, firm seedbed will assure more uniform stands.

6. Time your irrigation to do the most good. Three irrigations on small grain at (1) the jointing stage, (2) the boot stage, and (3) soft dough stage will produce good yields. Irrigation during the blossom stage on small grains and grass seed will often cause a drop of bloom and a decreased yield. In corn, the tasseling-to-silk stage of plant growth is critical. Moisture deficits for one or two days during this critical period may result in yield reduction as much as 20 percent.

IRRIGATION TIPS

U.S.D.A., SOIL CONSERVATION SERVICE and IDAHO SOIL CONSERVATION DISTRICTS

Efficient use of irrigation water is always important but it becomes a necessity when drougth threatens. How to make the best use of the water available becomes critical. If you have a conservation farm or ranch plan which your Soil Conservation District helped you prepare, you have part of the information needed. Your land capability map will help you make the right decisions.

1. Select your best soils for the most intensive cropping. These will generally be the deeper soils that take water well and have a medium to high water holding capacity. Heavy soils that take water slowly usually cause heavy loss by surface runoff and evaporation. Sandy soils require the most frequent irrigations and, with this increase, normal losses repeat each time. They are subject to an additional loss of water by getting below the depth where the roots can reach it. Within this limitation, select fields closest to the water supply to cut down on ditch losses.

2. Select a balance of crops that have their greatest need for water at different times and plan a minimum of high water use crops. Grass seed for range type grasses is a good low water use crop. Spring grains have a relatively low water use and are satisfied early. You may wish to delay hay seedings of alfalfa grass until fall and seed in the stubble rather than risk the loss of a spring seeded stand.

These "rule of thumb" guides may help you in planning: (Check with your Work Unit Conservationist in the SCD office for a handy pocket size "Rule of Thumb" guide).

Irrigate ABOUT this deep IF there are no restrictions to root development:

Ladino Clover	18 inches
Potatoes and Grass	24 inches
Grain and Corn	36 inches
Alfalfa	60 inches

Crops on an average take ABOUT 40% of their water from the first 1/4 and 30% from the second 1/4 of the root zone when it is available.

AVERAGE Capacity of soils to hold readily available moisture:

Texture Group	Inches of water per foot of soil
Coarse (Sand to loamy sand)	0.5-1.0
Light (Loamy fine sand to fine sandy loam)	1.0-1.5
Medium (Very fine sandy loam to silt)	1.5-2.0
Fine (Sandy clay loam to clay)	2.0-2.5

Most crops do very well IF you don't irrigate until ABOUT 60% of the available moisture is used. Potatoes like a higher level (use 35% to 40% of available moisture).

APPROXIMATE amount of water actually used in a season by some crops	
Green peas	12 inches
Small grain, dry beans and grass for seed	15 inches
Corn, potatoes, and sugar beets	24 inches
Alfalfa and grass	30 inches

AVERAGE season of high use 1/10 inch or more per day	
Potatoes	Mid-July to late Aug.
Sugar Beets	Late June to early Sept.
Grain	Mid-May to early August
Alfalfa	early May to early Sept.
Beans	Late June to early Sept.

Keep in mind that more porous soils and steeper slopes require shorter runs. Fields layed out and leveled with grade and length of runs to fit your soil require less water and labor.

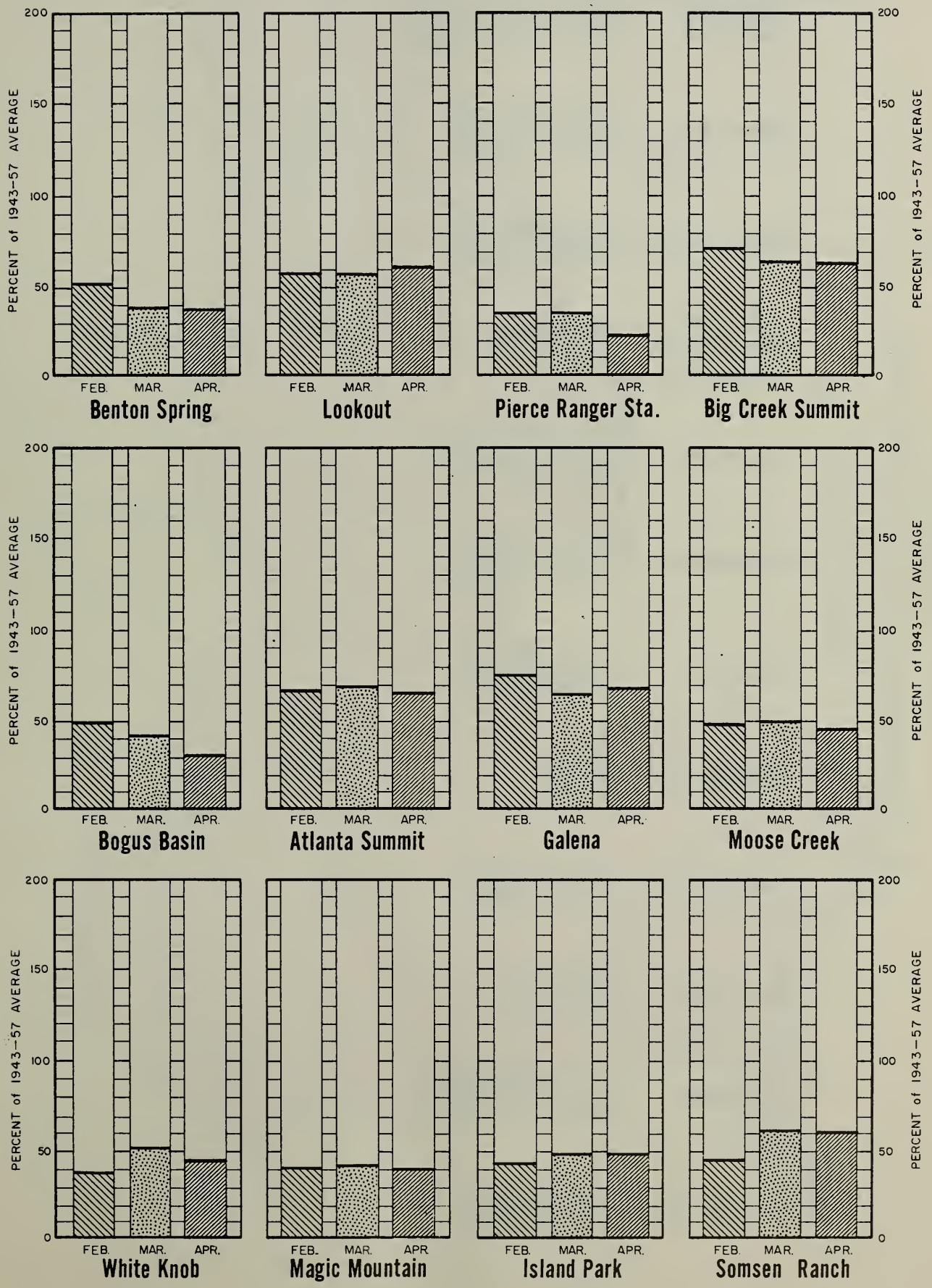
Lined canals or ditches, pipelines, and permanent checks, drops and turnouts save water and labor. Apply fertilizers in balance with the water you expect to have. (See your County Agent on fertilizers)

It is desirable to start the irrigation season with the root zone full of water either from winter moisture or your first irrigation. Don't apply more water than the root zone will hold either now or at later irrigations. From here on, apply water only when it is needed and only as much as is needed. Here are some helpful ideas:

1. Use a soil auger or a shovel to help you determine when you need to irrigate and how much to irrigate. The "Rule of Thumb" tables are a good guide.
2. Use that soil auger or a shovel to check depth of water penetration and pattern during and after each irrigation. Make sure you can determine the difference between where you irrigate and where you haven't.
3. Over-irrigating early in the season may slow down root growth. At all times, it leaches soil nutrients.
4. Use the largest non-erosive stream you can to flush through furrows and corrugates, then cut the stream back to where it will just get through. If it takes more than 1/5 to 1/4 of the total irrigation time to flush through, then your runs are probably too long.
5. Portable gated pipe can help you apply water in shorter runs for greater irrigation efficiency in fields laid out with long rows for better farming efficiency. Gated pipe can easily be moved out of the way between irrigations.
6. If you receive water in a small continuous stream, an overnight storage reservoir may be your salvation. You can apply all of it during the day when you can control it.
7. Small reservoirs at the lower end of the farm to catch all waste water for pumping back on your fields may be good business.
8. Keep useless vegetation out of canals and ditches and off the ditch banks. Willows and weeds along waterways use a large amount of water.
9. Crop residue and barnyard manure increase water intake rates and improve soil structure.
10. Attend your local water supply forecast meetings and participate in water management discussions.

SNOW WATER DEPTHS ACCUMULATION
For Selected Snow Courses
As Compared To 1943-57 15Yr. Average

APRIL 1, 1963



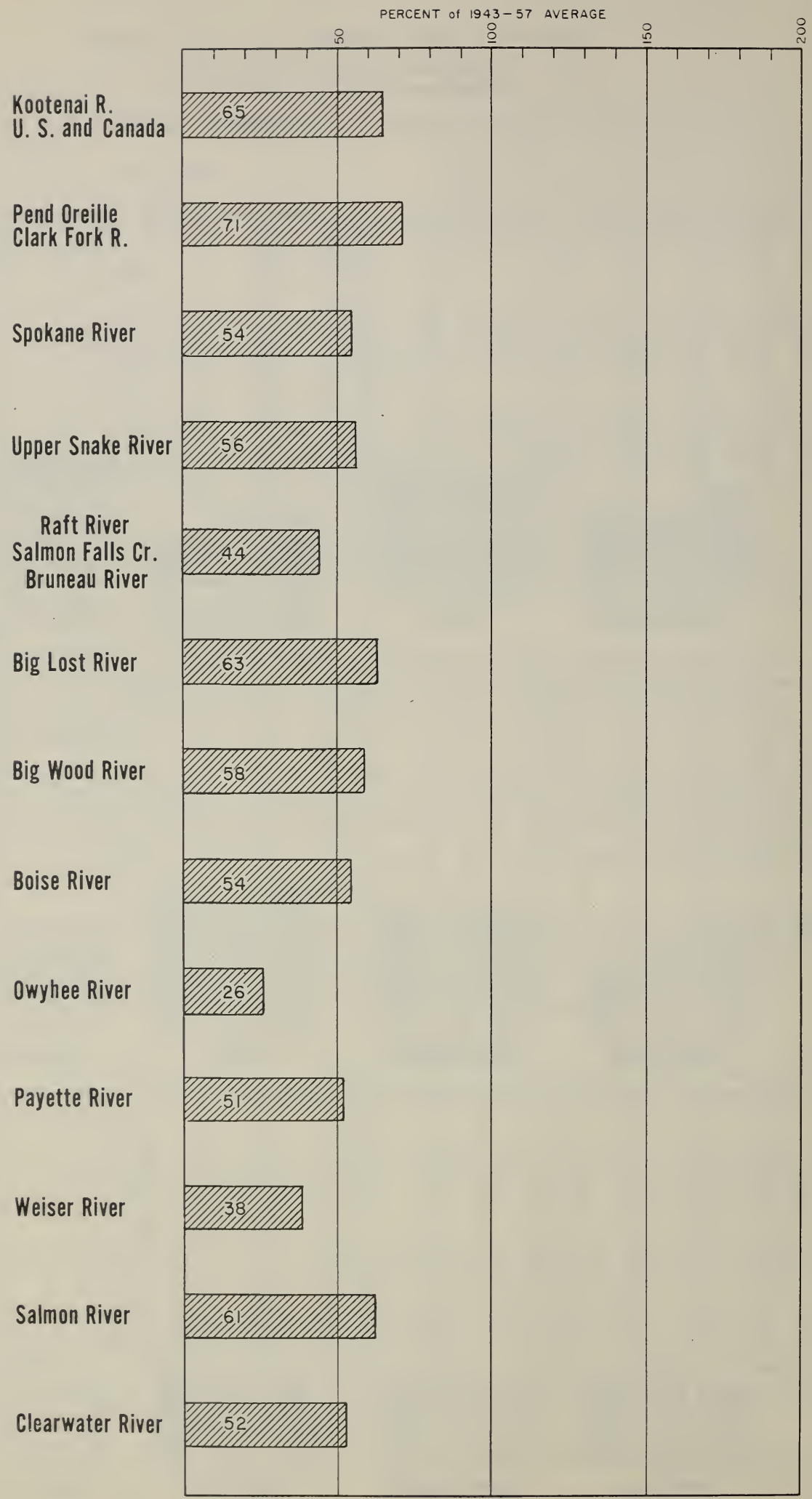
SNOW WATER DEPTHS

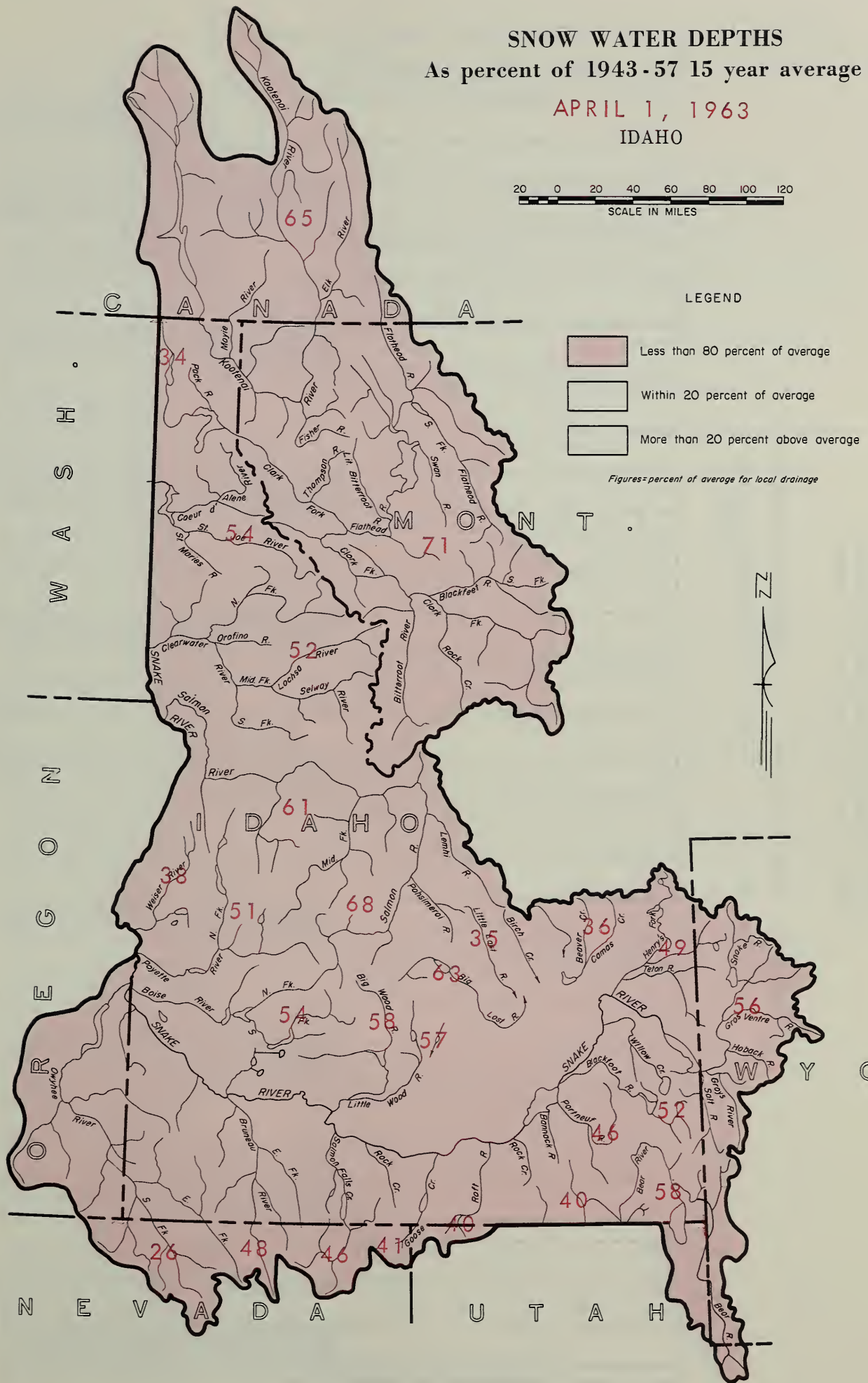
BY DRAINAGE

Compared To The 1943 - 57 15 Yr. Average

Snow Cover as of Approximately

APRIL 1, 1963

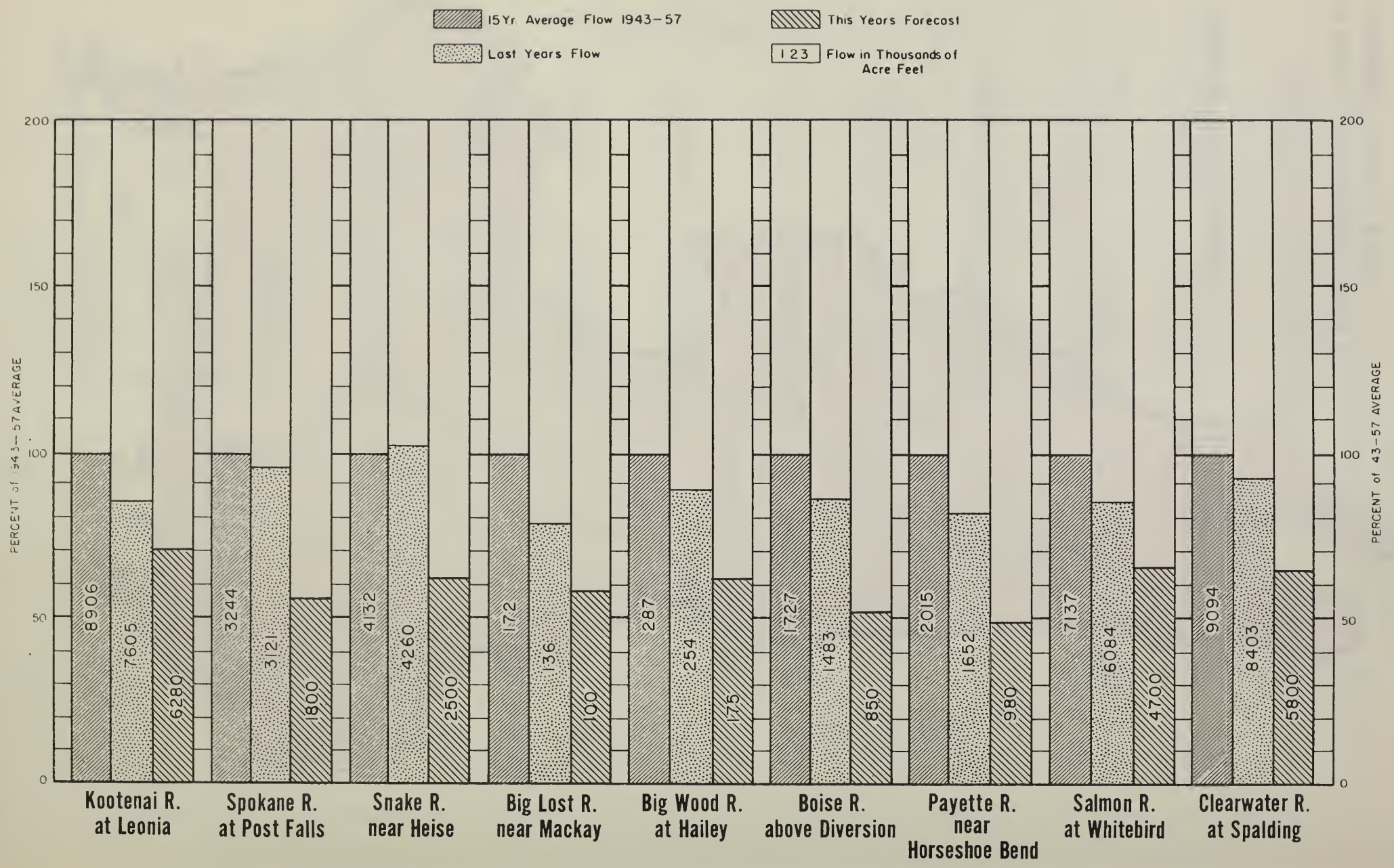



SNOW WATER DEPTHS
As percent of 1943-57 15 year average
APRIL 1, 1963
IDAHO
20 0 20 40 60 80 100 120
SCALE IN MILES
LEGEND
Less than 80 percent of average
Within 20 percent of average
More than 20 percent above average
Figures=percent of average for local drainage
CANADA
MONT.
WASH.
OREGON
NEVADA
UTAH
WYO.
IDAHO
65
34
54
71
52
61
38
51
68
35
83
36
49
54
58
57
56
52
46
40
58
26
48
46
47
40
Kootenai River
Moyie River
Pack R.
Fisher R.
Flathead R.
S. Fk. Swan R.
Lake Pend Oreille
Clark Fork
Thompson R.
Lt. Bitterroot R.
Coeur d'Alene
St. Joe River
St. Maries R.
N. Fk. Clearwater
Orofino R.
Clearwater River
Mid. Fk. Lochsa
Selway River
Salmon River
S. Fk.
Bitterroot River
Blackfeet R.
Rock Cr.
Weiser River
Mid. Fk.
N. Fk.
Payette River
Boise River
Lemhi R.
Pahsimeroi R.
Little Lost R.
Birch Cr.
Big Lost R.
Big Wood R.
Little Wood R.
Beaver Cr.
Camas Cr.
Henry's Fork
Teton R.
Snake R.
Gros Ventre R.
Hoback R.
Willow Cr.
Blackfoot R.
Gros Soil R.
Portneuf R.
Bannock R.
Rock Cr.
Raft R.
Salmon Falls Cr.
Owyhee River
Bruneau E. Fk.
Goose
Bear River

WATER SUPPLY FORECASTS

APRIL THROUGH SEPTEMBER PERIOD

Based on Snow Surveys made on approximately

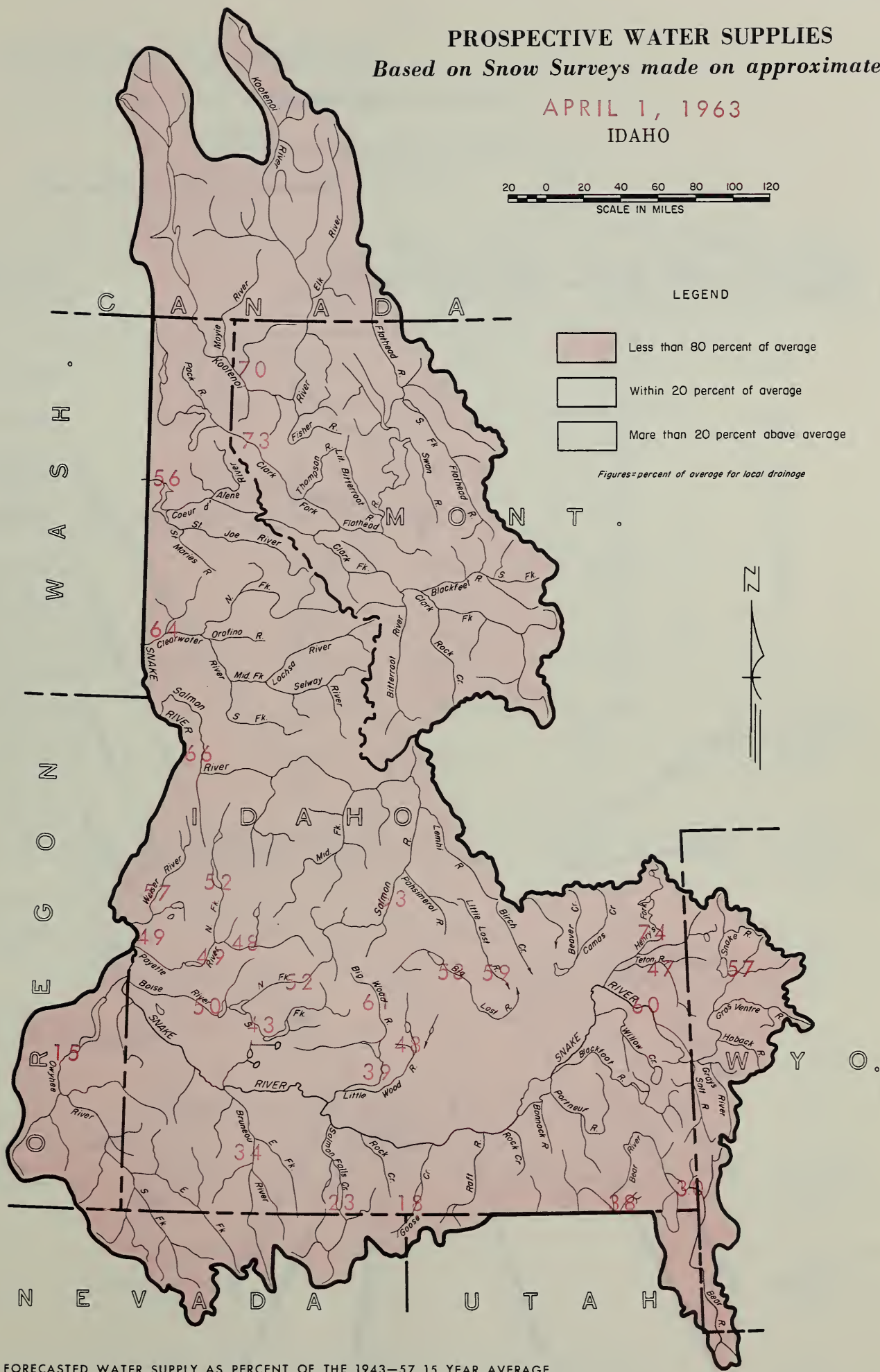


PROSPECTIVE WATER SUPPLIES

Based on Snow Surveys made on approximately

APRIL 1, 1963

IDAHO



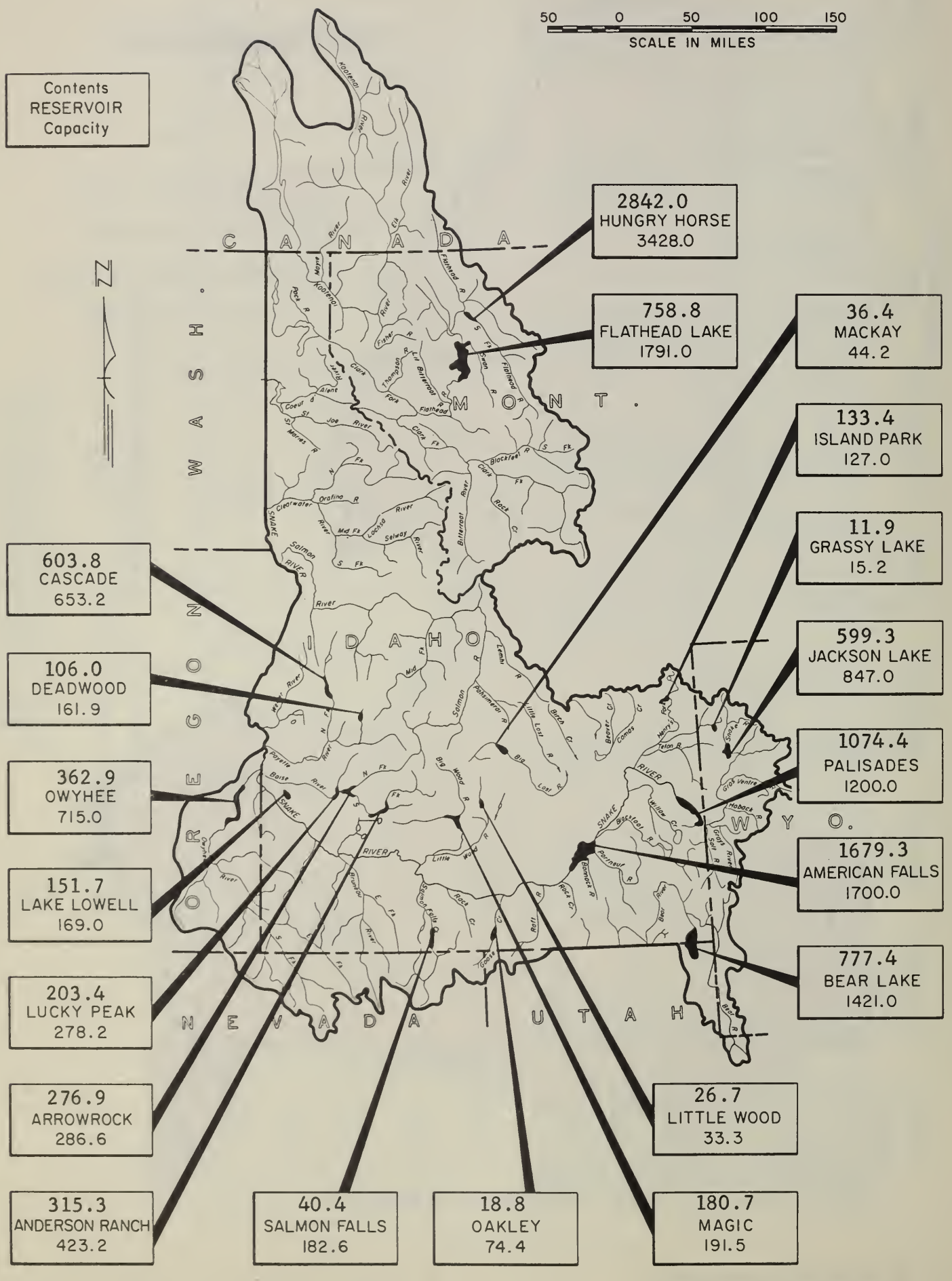
FORECASTED WATER SUPPLY AS PERCENT OF THE 1943—57 15 YEAR AVERAGE

U. S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE

RESERVOIR STORAGE

USABLE CONTENTS (1,000 Acre Feet)

APRIL 1, 1963



VALLEY PRECIPITATION 1/

Division Averages and Departures
In Inches

DRAINAGE DIVISIONS	Fall Sep.-Oct.-Nov. 1962		Winter Dec. 1962 - Mar. 1963	
	Average 2/	Departure 3/	Average 2/	Departure 3/
Kootenai	1.87	-0.62	8.12	-2.46
Flathead	2.01	+0.23	7.62	-0.03
Clark Fork	0.74	+0.04	3.37	-0.11
Pend Oreille-Spokane	4.12	+0.84	11.89	-2.49
Upper Snake	2.26	+0.28	6.23	-0.84
Snake River Plain	0.94	+0.21	3.08	-0.54
Salmon-Payette-Boise	2.29	+0.08	6.49	-2.95
Clearwater	2.31	-0.12	9.16	-1.72
Southeastern Oregon	0.98	+0.07	3.25	-1.24

1/ Preliminary analysis by U. S. Weather Bureau from data furnished by Meterological Service of Canada and U. S. Weather Bureau.

2/ 15-year (1943-1957) division average.

3/ Departure from 15-year (1943-57) drainage division average.

WATER SUPPLY OUTLOOK and SNOW SURVEYS
KOOTENAI, PEND OREILLE, SPOKANE, PALOUSE, CLEARWATER, SALMON WATERSHEDS
IDAHO

as of APRIL 1, 1963

Far below normal streamflow is the outlook for the spring and summer season in this area. Precipitation and snowfall during March continued the below normal trend of the winter and did not change the outlook.

Snow cover varies from only 18 per cent of normal on the Palouse River to 71 per cent on the Pend Oreille-Clark Fork River. The only heavy storms that occurred during March came during the last few days of the month and did not change the general snow cover picture. The south slopes are bare up to unusually high elevations and the snow line is much higher than normal. This condition is expected to reduce streamflow more than is indicated by the snow-water measurements.

Soil moisture conditions are slightly below or close to normal beneath the snow at the higher elevations. The middle elevation and lower elevation soil moisture sites indicate good soil moisture as a result of melting snow and precipitation.

Streamflow during the month was close to average, but reservoir-stored water is excellent as a result of good streamflow last year and this winter.

Farmers and ranchers, relying on water from small streams, can anticipate below normal supplies and probably prolonged pumping requirements for those who sprinkle or irrigate from wells or streams.

WATER SUPPLY OUTLOOK expressed as "Poor", "Foir" "Average" or "Excellent" and STREAMFLOW FORECASTS (1,000 Ac. Ft.) [a]

STREAM and/or FORECAST POINT	OUTLOOK	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE
Kootenai River at Leonia [c]	Good	6280	Apr-Sep	8907	70
		4260	Apr-Jun	6257	68
Clark Fork at Whitehorse Rapids [c]	Good	10136	Apr-Sep	13932	73
		9320	Apr-Jul	12763	73
		7876	Apr-Jun	10816	73
Priest River nr. Priest River [d]	Poor	400	Apr-Jul	904	44
Spokane River at Post Falls [e]	Poor	1800	Apr-Sep	3242	56
Coeur d'Alene River nr. Cataldo		770	Apr-Sep	1322	58
		730	Apr-Jul	1263	58
St. Joe River at Calder		810	Apr-Sep	1391	58
		770	Apr-Jul	1323	58
Clearwater River at Spalding	Fair	5800	Apr-Sep	9094	64
at Kamiah		3260	Apr-Sep	5116	64
		3130	Apr-Jul	4901	64
North Fork nr. Ahsahka		2100	Apr-Sep	3289	64
		1960	Apr-Jul	3086	64
Salmon River at Whitebird	Fair	4700	Apr-Sep	7137	66
nr. Challis		600	Apr-Sep	959	63
		525	Apr-Jul	839	63

COMPARISON of SNOW COVER

RIVER BASIN WATERSHED	NO. OF COURSES AVERAGED	THIS YEARS SNOW WATER EXPRESSED AS PERCENT OF: LAST YEAR	AVERAGE [b]
Kootenai	12	74	65
Pend Oreille-Clark Fork	49	71	71
Priest River	2	34	34
Spokane River	11	49	54
Palouse River	3	13	18
Clearwater River	8-9	56	52
Salmon River	7	65	61

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month) THIS YEAR	LAST YEAR	1943-57 AVERAGE
Hungry Horse	3428.0	2842.0	2200.0	2177.0*
Flathead	1791.0	758.8	598.3	628.8
Pend Oreille	1561.0	1085.0	648.0	--
Coeur d'Alene	238.5	178.5	157.3	--

Report Prepared by
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P.O. BOX 1247, BOISE, IDAHO

HISTORICAL DATA (Kootenai River) Data obtained from U.S. Geological Survey records.

YEAR	SEASONAL VOLUMES at LEONIA STREAMFLOW (1,000 Acre-Ft.)			RIVER FLOOD STAGES			
				LEONIA		BONNERS FERRY	
	APR. – SEPT.	APR JUNE	MAY – JUNE	GAGE HEIGHT	PEAK C.F.S.	MAX. DISCH. C.F.S.	GAGE HEIGHT
1943	9,255	6,191	4,333	114.12	58,000	65,000	24.99
1944	4,136	2,818	2,505	108.55	30,000	31,100	14.02
1945	6,050	4,060	3,802	114.07	57,700	61,300	24.04
1946	9,510	6,903	5,834	116.65	80,500	77,000	30.41
1947	9,100	6,823	5,629	117.31	88,200	82,500	31.31
1948	11,073	8,440	7,508	123.15	139,000	123,000	35.32
1949	6,899	5,366	4,316	116.68	81,700	75,200	30.84
1950	9,965	6,677	5,890	118.21	90,100	87,100	33.98
1951	10,807	7,101	6,001	117.04	76,300	83,800	31.86
1952	8,454	6,096	4,659	114.87	63,000	69,700	26.30
1953	8,402	5,600	5,024	116.51	74,700	76,700	30.21
1954	12,213	7,583	6,878	120.81	104,000	132,000	35.55
1955	8,444	5,377	4,996	117.30	79,300	86,200	31.80
1956	11,494	8,755	7,308	121.65	115,000	127,000	37.09
1957	7,798	6,074	5,468	115.93	71,000	78,300	28.81

SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	*CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Benton Spring	4900	48	14.4	3/27	9.8	9.2	9.8
Brown	3100	36	6.7	4/1	4.3	4.6	--
Fohl	3450	48	13.3	4/1	8.9	8.4	--
Fourth of July Summit	3100	48	11.6	4/1	8.2	--	--
Lookout	5250	48	11.0	4/1	6.1	--	--
Midway	2200	36	6.1	4/1	3.8	3.8	--

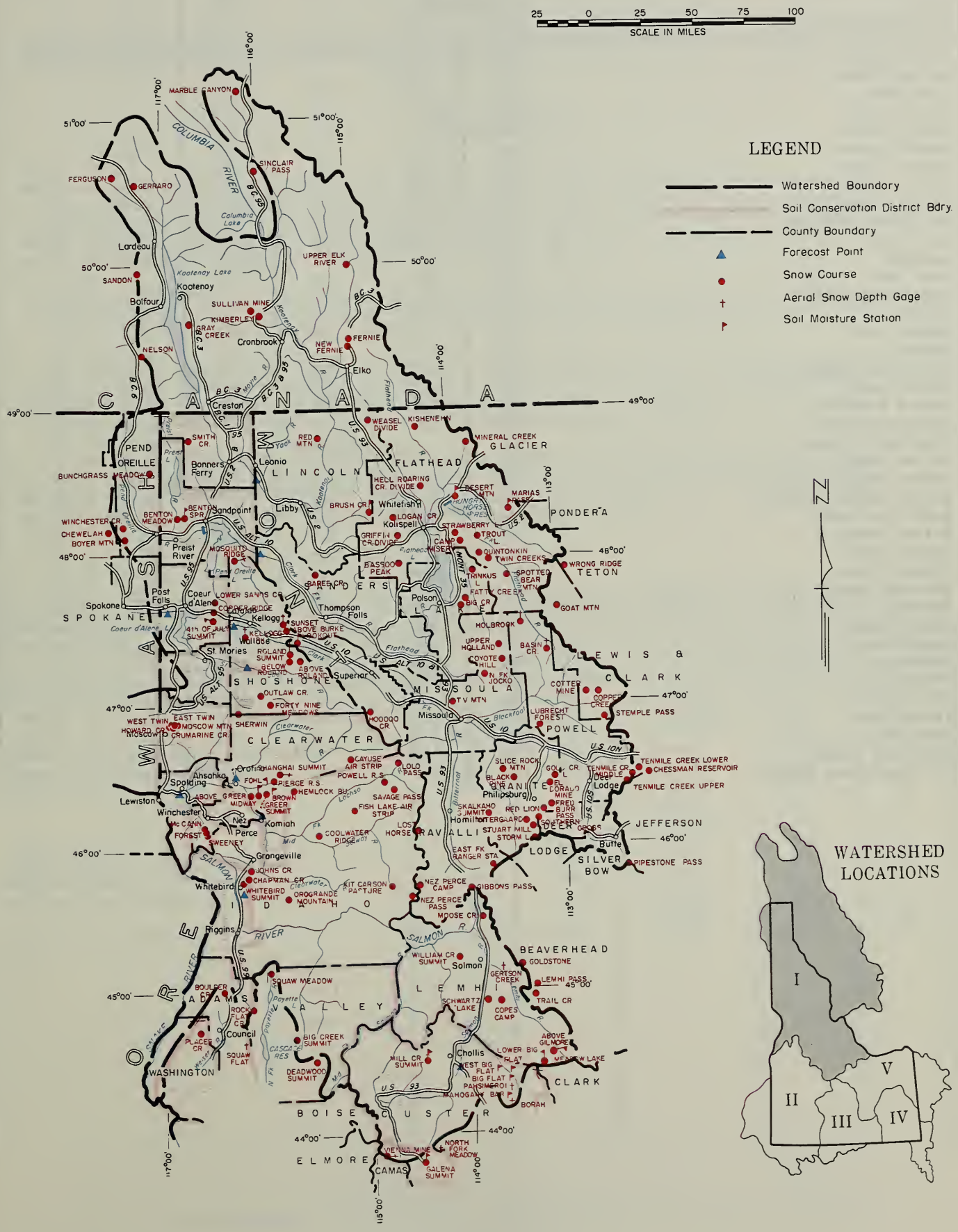
* Total soil moisture. Not comparable to last year's published data.

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
					LAST YEAR	1943-57 AVERAGE
Above Burke	4100	3/12	43	13.1	27.8	21.0
Above Gilmore	8200	3/29	29	7.0	9.9	--
Above Greer	1240	4/1	0	0.0	0.0	--
Above Roland	4350	3/13	50	16.9	32.5	29.8
Below Roland	3770	3/13	20	6.7	19.0	14.4
Benton Meadow	2344	3/27	0	0.0	4.3	3.0
Benton Spring	4900	3/27	26	8.8	21.4	22.9
Big Creek Summit	6608	4/3	78	25.5	39.3	37.9
Boulder Creek	5500	4/1	33	8.6	26.4	24.8
Cayuse Airstrip	3700	4/3	6	1.2	14.8	10.8*
Chapman Creek	4220	3/29	0	0.0	2.0	1.0*
Coolwater Mountain	6200	4/5	57	20.8	29.0	--
Copes Camp	7500	3/28	24	5.9	8.9	--
Copper Ridge	4800	3/29	35	12.0	34.4	32.8
Crater Meadows	6100	4/2	87	38.0	--	--
Crumarine Creek	3500	3/30	0	0.0	--	4.5*
Deadwood Summit	7000	4/3	108	35.8	39.4	48.4
East Twin	4000	3/30	2	0.6	17.1	10.2*

(•) Estimated 1943-57 average. (••) Average for period of record. (^) Affected by dike breakage downstream. (o) Forecasts made by P. E. Farnes, SCS, Bozeman, Montana. ( ) Aerial observation, water content estimated. (a) Assuming normal meteorological conditions. (b) Actual or estimated 1943-57 average. (c) Observed flow corrected for storage in Flathead Lake and Hungry Horse. (d) Observed flow corrected for storage in Priest Lake. (e) Observed flow corrected for storage in Coeur d'Alene Lake and diversions by Spokane Valley Farms Company and Rathdrum Prairie Canals.

KOOTENAI, PEND OREILLE, SPOKANE, PALOUSE, CLEARWATER, SALMON WATERSHEDS



SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Elk Butte	5550	4/2	51	22.6	--	--
Fish Lake Airstrip	5000	4/3	79	26.6	40.4	42.6*
Forest	4550	3/28	0	0.0	8.9	--
Forty-nine Meadows	5000	4/5	50	24.2	36.0	39.6
Fourth of July Summit	3100	4/1	T	T	13.1	--
Galena Summit	8795	4/1	71	19.4	24.2	25.2*
Gertson Creek +	8050	3/28	9	2.2	9.2	--
Goat Lake	6600	4/2	109	46.1	--	--
Granite Peak	6000	4/2	96	38.0	--	--
Greer Summit	3000	4/1	0	0.0	0.0	--
Hemlock Butte	5500	4/3	88	40.6	57.5	--
Howard Creek	3500	3/30	0	0.0	T	0.0*
Johns Creek	3810	3/29	0	0.0	0.3	0.8*
Kellogg Peak +	5560	4/2	44	13.4	30.9	31.2
Kit Carson Pasture	4700	3/28	11	4.3	7.8	9.0
Lolo Pass	5230	3/28	56	21.8	39.0	36.7*
Lookout	5250	4/1	79	24.1	42.8	39.0*
Lost Lake	6000	4/2	106	44.0	--	--
Lower Sands Creek	3400	3/29	22	8.6	22.8	21.4*
McCann	4300	3/28	0	0.0	9.4	--
Meadow Lake	9100	3/29	48	12.9	22.5	--
Midway	2200	4/1	0	0.0	0.0	--
Mill Creek Summit	8870	3/31	54	16.0	22.2	24.0
Moose Creek	6200	3/29	29	8.4	14.6	18.3
Moscow Mountain	4800	3/30	20	5.6	22.9	18.9*
Mosquito Ridge +	5110	4/2	82	25.0	41.8	38.3
Orogrande Mountain	7800		Delayed		40.2	--
Outlaw Creek	3750	4/5	23	13.7	18.2	--
Pierce Ranger Station	3171	3/29	7	2.5	9.6	10.9*
Powell Ranger Station	4230	3/28	15	6.4	14.1	14.0*
Rock Flat Summit	5200	3/26	24	7.6	19.6	20.0*
Roland Summit +	5200	4/2	61	20.7	39.5	38.5
Savage Pass	6600	3/28	59	21.8	28.4	30.3*
Schwartz Lake	8500	3/28	40	10.4	13.0	--
Shanghai Summit +	4600	4/3	29	11.6	33.5	30.5
Sherwin	3200	3/30	10	3.6	16.6	--
Smith Creek	4800	4/1	103	33.2	46.5	49.6
Squaw Meadow +	5800	4/4	69	22.6	42.4	39.9*
Sunset +	5600	4/2	78	23.8	35.6	31.9
Sweeney	4435	3/28	0	0.0	7.3	--
Twin Peaks +	9190	4/3	68	20.1	--	--
Vienna Mine	8900	4/3	92	30.2	36.1	38.8*
West Twin	4200	3/30	3	0.6	14.3	9.5*
Whitebird Summit	4400	3/29	T	T	11.8	5.0*
Williams Creek Summit	7800	3/29	31	8.0	13.7	15.0

WATER SUPPLY OUTLOOK and SNOW SURVEYS
BOISE, PAYETTE, WEISER, BRUNEAU, OWYHEE WATERSHEDS
IDAHO

as of
APRIL 1, 1963

GENERAL SUMMARY

The water supply outlook for this area is poor on the smaller streams without good storage facilities and near normal on the Boise, Payette, and Owyhee Rivers by using stored water. The water rights controlled by flow of the rivers can expect an early drop in deliveries and a very low total supply. Heavy rains in April could somewhat change this outlook, but it would take unusually heavy and continuous storms to do so.

The snow pack varies from 26 percent of average on the Owyhee to 54 percent on the Boise. Low and middle elevation snow cover is entirely gone and south slopes are bare up to 9,000 feet. This seriously reduces the water producing area on all of the drainages.

Soil moisture conditions beneath the snow pack at high elevations is still unusually dry. The lower and middle elevations have started to dry out but still have good soil moisture. The dry south slopes and dry soil at high elevations beneath the snow pack are expected to reduce streamflow more than is indicated by the snow course measurements.

Stored water on the Boise and Payette Rivers is excellent. The Owyhee Reservoir is below normal, but can still deliver near normal water supplies by heavy drafts upon stored water. Water users in general should use water very conservately and carry over as much as possible into the 1964 season which might be another year of light snowfall.

WATER SUPPLY OUTLOOK expressed as "Poor", "Foir" "Average" or "Excellent" **and STREAMFLOW FORECASTS (1,000 Ac. Ft.)** [a]

STREAM and/or FORECAST POINT	OUTLOOK	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE
Boise River nr. Twin Springs		410	Apr-Sep	791	52
		380	Apr-Jul	737	52
nr. Boise [c]	Fair	850	Apr-Sep	1704	50
South Fork at Anderson Dam [d]		280	Apr-Sep	646	43
Payette River nr. Horseshoe Bend [e]	Fair	980	Apr-Sep	2016	49
North Fork at Cascade [f]		320	Apr-Sep	618	52
nr. Banks		410	Apr-Sep	793	52
		400	Apr-Jul	765	52
South Fork nr. Banks [g]		520	Apr-Jul	1077	48
Weiser River ab. Crane Creek [h]	Poor	330	Mar-Sep	575	57
Bruneau River nr. Hot Springs	Poor	80	Mar-Sep	235**	34
Lake Owyhee net Inflow [i]	Average	65	Apr-Sep	430	15
		62	Apr-Jul	412	15
Snake River at Weiser	Poor	3800	Apr-Sep	7725	49

Report Prepared by
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COMPARISON of SNOW COVER

RIVER BASIN WATERSHED	NO. OF COURSES AVERAGED	THIS YEARS SNOW WATER EXPRESSED AS PERCENT OF : LAST YEAR	AVERAGE *b*
Boise	11	58	54
Payette	10	53	51
Weiser	2-5	52	38
Bruneau	8	38	48
Owyhee	20	19	26

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month) THIS YEAR	LAST YEAR	1943-57 AVERAGE
Anderson	423.2	315.3	60.2	183.0*
Arrowrock	286.6	276.9	255.7	186.8
Lucky Peak	278.2	203.4	50.0	--
Lake Lowell	169.0	151.7	151.9	146.7
Cascade	653.2	603.8	159.7	236.0*
Deadwood	161.9	106.0	61.9	91.4
Owyhee	715.0	362.9	249.5	539.0

SOIL MOISTURE

STATION NAME	STATION ELEVATION	PROFILE (Inches) DEPTH	PROFILE (Inches) ** CAPACITY	SOIL MOISTURE (Inches) DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Bad Bear	5500	60	6.3	3/31	4.8	--	--
Bogus Basin Road	4830	48	7.1	3/31	5.7	6.0	5.7*
Moores Creek Summit	6100	60	8.8	3/31	6.2	--	--
Mud Flat	5500	48	12.8	4/2	10.5	8.5	9.7
Triangle	5150	60	16.2	4/2	14.4	--	--

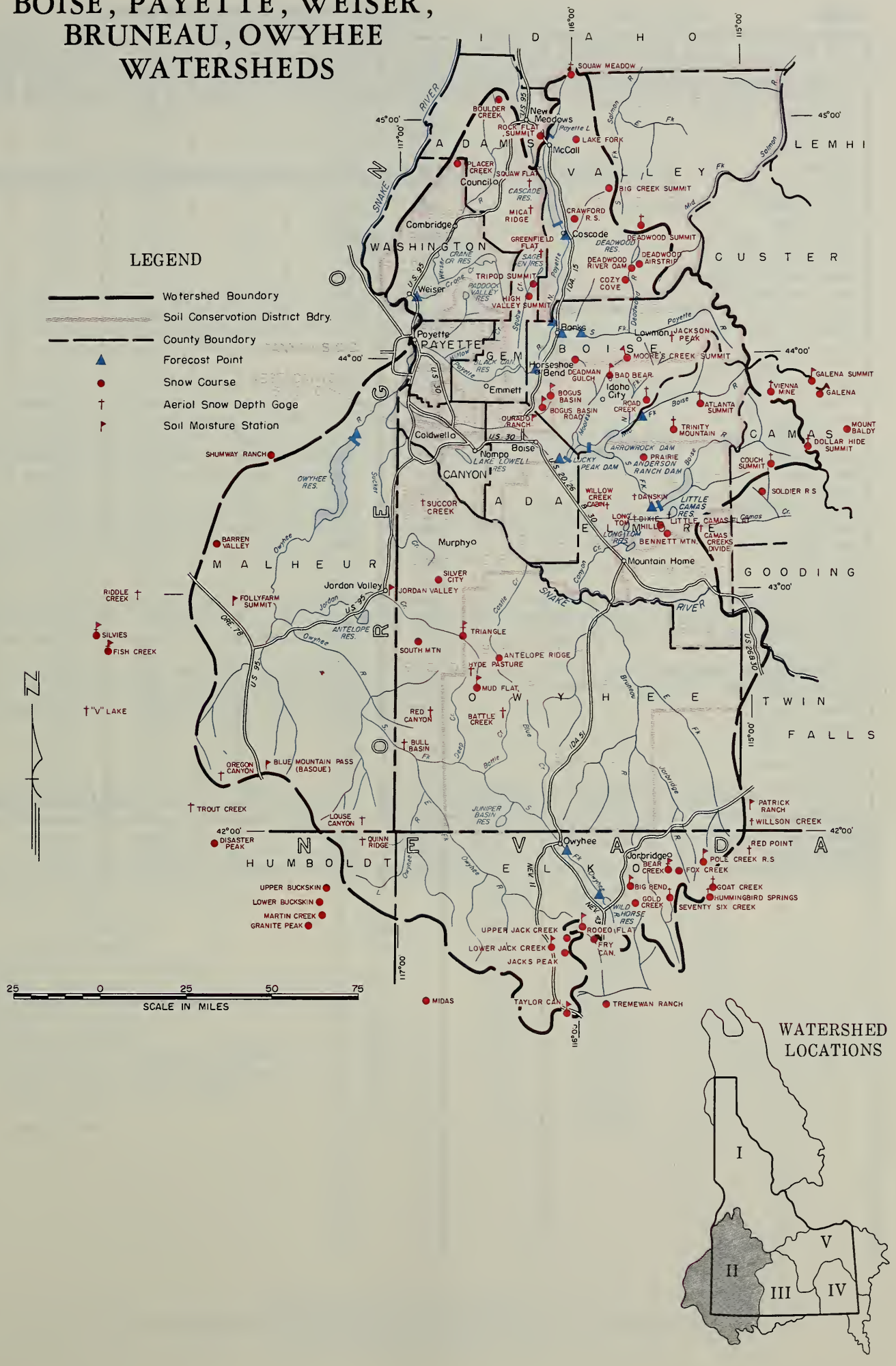
* February 15th measurement.
** Total soil moisture. Not comparable to last year's published data.

SNOW

SNOW COURSE NAME		ELEVATION	CURRENT INFORMATION DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	PAST RECORD WATER CONTENT (Inches) LAST YEAR	1943-57 AVERAGE
Antelope Ridge		5900	4/2	T	T	6.5	--
Atlanta Summit +		7500	4/3	80	25.2	37.4	37.4
Bad Bear		5500	3/31	T	T	16.1	--
Battle Creek +		5700	4/3	0	0.0	2.3	--
Bear Creek	Nev.	7800	3/26	44	12.9	24.3	21.5*
Bennett Mountain		6650	4/2	24	8.6	20.3	--
Big Bend	Nev.	6700	3/27	T	T	13.5	10.5
Big Creek Summit		6608	4/3	78	25.5	39.3	37.9
Bogus Basin		6120	3/31	27	8.4	24.6	27.0*
Bogus Basin Road		5360	3/31	0	0.0	1.0	2.4*
Boulder Creek		5500	4/1	33	8.6	26.4	24.8
Bull Basin +		5600	4/3	0	0.0	1.1	--
Camas Creeks Divide +		5720	4/2	0	0.0	12.3	--
Couch Summit		7000	3/28	36	10.6	19.3	21.1*
Cozy Cove		5900	3/27	10	4.1	17.2	17.5*
Crawford Ranger Station		4800	4/2	T	T	10.4	6.8*
Danskin +		5650	4/2	T	T	15.0	--
Deadwood Dam Airstrip		5440	3/27	7	3.5	17.5	--
Deadwood Dam		5290	3/27	13	4.7	18.4	18.3*
Deadwood Summit		7000	4/3	108	35.8	39.4	48.4

**Estimated 1943-57 average. (o) Forecast made by W. T. Frost, S.C.S., Portland, Oregon. (+) Aerial observation, water content estimated. (a) Assuming normal meteorological conditions. (b) Actual or estimated 1943-57 average. (c) Observed flow corrected for storage in Arrowrock, Anderson Ranch and Lucky Peak. (d) Observed flow corrected for change of storage in Anderson Ranch Reservoir. (e) Observed flow corrected for change of storage in Cascade & Deadwood Reservoirs. (f) Observed flow corrected for change of storage in Cascade Reservoir. (g) Observed flow corrected for change of storage in Deadwood Reservoir. (h) Observed flow of Weiser River nr. Weiser minus the observed flow of Crane Creek at mouth. (i) From U.S.B.R. records of inflow. (**) 1944-1957 average.*

BOISE, PAYETTE, WEISER, BRUNEAU, OWYHEE WATERSHEDS



SNOW

SNOW COURSE			CURRENT INFORMATION			PAST RECORD	
			DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME		ELEVATION				LAST YEAR	1943-57 AVERAGE
Dixie Hill		5230	4/2	T	T	6.8	--
Dollarhide Summit		8700	3/25	49	16.8	25.5	28.1*
Fox Creek	Nev.	6800	3/26	6	1.4	12.9	9.1*
Fry Canyon	Nev.	6700	3/27	0	0.0	9.4	9.2
Galena		7500	4/1	53	14.2	19.2	20.2
Galena Summit		8795	4/1	71	19.4	24.2	25.2*
Goat Creek	Nev.	8800	3/27	40	12.8	27.8	18.9*
Gold Creek	Nev.	6600	3/27	0	0.0	8.4	6.0
Greenfield Flat +		7370	4/2	109	35.6	50.7	--
High Valley Summit		5170	4/2	4	1.4	13.5	--
Hummingbird Springs	Nev.	8945	3/27	50	15.1	31.5	22.8*
Hyde Pasture +		5800	4/3	T	T	4.6	--
Jacks Peak	Nev.	8420	3/29	53	14.7	36.4	25.4*
Jackson Peak +		7000	4/3	72	22.7	31.1	36.5*
Lake Fork		6000	3/26	21	6.2	17.3	17.4
Little Camas Flat +		4950	4/2	0	0.0	7.2	--
Long Tom +		4550	4/2	0	0.0	0.0	--
Lower Jack Creek		6300	3/29	T	T	5.5	2.5
Mica Ridge +		6800	4/2	66	21.6	41.5	--
Moores Creek Summit		6100	3/31	40	12.6	31.4	34.9
Mount Baldy		9000	3/27	40	11.6	21.3	22.7*
Mud Flat		5500	4/2	1	0.2	4.8	--
Placer Creek		6000	3/29	27	7.9	17.2	19.2
Pole Creek Ranger Station	Nev.	8330	3/27	45	13.8	23.9	20.5*
Prairie		5600	4/1	0	0.0	3.9	5.1*
Red Canyon +		6650	4/3	1	0.2	9.1	--
Red Point +	Nev.	7940	3/26	6	1.8	15.2	--
Road Creek		6800	4/3	0	0.0	10.7	12.5*
Rock Flat Summit		5200	3/26	24	7.6	19.6	20.0*
Rodeo Flat	Nev.	6800	3/27	T	T	6.7	8.7
Seventy-six Creek	Nev.	7100	3/27	11	3.9	17.3	15.7*
Silver City		6400	4/2	4	0.8	18.9	17.5*
Soldier Ranger Station		6100	3/28	6	2.3	13.3	12.0
South Mountain		6340	3/29	2	0.3	14.8	12.1*
Squaw Flat +		6230	4/2	44	14.4	33.9	--
Squaw Meadow +		5800	4/4	69	22.6	42.4	39.9*
Succor Creek		6100	4/3	T	T	8.4	--
Taylor Canyon	Nev.	6200	3/27	0	0.0	4.8	3.5
Triangle		5150	4/2	T	T	0.0	--
Trinity Mountain		7400	4/3	85	30.1	46.8	47.5*
Tripod Summit		5200	4/2	13	5.6	18.5	--
Upper Jack Creek	Nev.	7250	3/29	14	3.4	14.7	10.9
Vienna Mine		8900	4/3	92	30.2	36.1	38.8*
Willow Creek Cabin +		4710	4/2	0	0.0	0.0	--

WATER SUPPLY OUTLOOK and SNOW SURVEYS

SNAKE, BIG WOOD, LITTLE WOOD, RAFT, GOOSE CREEK, SALMON FALLS CREEK WATERSHEDS

IDAHO

as of

APRIL 1, 1963

GENERAL SUMMARY

The outlook for streamflow on all of the rivers in this area is poor and in several cases critically low. Reservoir-stored water on the Snake and other larger rivers is excellent and can make up for the expected low inflow. The smaller rivers, however, and streams without good carry-over water face critical water shortages in the 1963 season.

The snow pack varies from 40 per cent of average on the Raft River to 58 per cent on the Big Wood. Many of the snow courses in the area have the lowest water contents ever recorded in the period of record going back to 1936. Low and middle elevation snow is gone and south slopes are bare to the tops of the ranges. The water producing area on all of these drainages is unusually limited in size. Streamflow forecasts have been lowered as a result of this condition and the dry soil beneath the snow pack.

Soil in general throughout the area is unusually dry. A few sites indicate good soil moisture as a result of early snow-melt, but all of the high sites still show unusually dry soil. Valley soils are also dry and irrigation water is being used early to germinate the crops planted.

Reservoir-stored water on the larger rivers with good storage facilities can avert water shortages for 1963. However, on many of the smaller rivers, reservoir-stored water cannot make up for the extremely low streamflow expected and critical water shortages are in prospect.

Water in general should be used conservatively to produce the most from available supplies this year. If storage facilities are available, strive to carry over as much as possible for the 1964 season, which could also be a low snowfall year.

WATER SUPPLY OUTLOOK expressed as "Poor", "Foir" "Average" or "Excellent" **and STREAMFLOW FORECASTS (1,000 Ac. Ft.)** [a]

STREAM and/or FORECAST POINT	OUTLOOK	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE
Snake River at Moran (Natural Flow)	--	530	Apr-Sep	928	57
Snake River nr. Heise *c*	Fair	2500	Apr-Sep	4132	60
nr. Blackfoot *d*	Fair	2540	Apr-Jul	4239	60
Big Wood River at Hailey *e*	Fair	175	Apr-Sep	287	61
(corrected for Diversions)		210	Apr-Sep	340	62
Big Wood nr. Bellevue	Poor	75	Mar-Jul	174*	43
(corrected for Diversions)		170	Mar-Jul	315*	54
Camas Creek nr. Blaine	Poor	50	Mar-Jul	135*	37
Magic Reservoir Inflow	Fair	120	Mar-Jul	309*	39
Little Wood River ab. High Five Creek	Poor	42	Apr-Sep	87.5*	48
Goose-Trapper Creeks inflow to Oakley Res.	Poor	6	Mar-Sep	34.0*	18
Salmon Falls Creek nr. San Jacinto	Poor	20	Mar-Sep	87.7	23
		19	Mar-Jul	85.0	22
Cedar Creek Inflow	Poor	2.5	Mar-Sep	--	--

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COMPARISON of SNOW COVER

RIVER BASIN WATERSHED	NO. OF COURSES AVERAGED	THIS YEARS SNOW WATER EXPRESSED AS PERCENT OF : LAST YEAR	AVERAGE *b*
Snake ab. American Falls	37	50	55
Big Wood	9	62	58
Little Wood	2	54	57
Raft	4-5	42	40
Goose Creek	4	39	41
Salmon Falls Creek	10	38	46

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month) THIS YEAR	LAST YEAR	1943-57 AVERAGE
Jackson Lake	847.0	599.3	165.8	465.5
Palisades	1200.0	1074.4	681.3	--
American Falls	1700.0	1679.3	1690.5	1517.7
Magic	191.5	180.7	46.8	122.1
Little Wood	33.3	26.7	12.6	--
Fish Creek	--	9.2	--	--
Oakley	74.4	18.8	30.9	22.6
Salmon Falls	182.6	40.4	44.0	37.0
Cedar Creek	29.9	7.7	--	--

SOIL MOISTURE

STATION NAME	ELEVATION	PROFILE (Inches) DEPTH	CAPACITY ***	SOIL MOISTURE (Inches) DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Badger Gulch	6660	36	7.0	3/23	5.0	6.7	--
Bear Creek	7800	72	16.8	3/26	7.8	9.6	8.6*
Conner Pass	5700	36	9.8	3/27	7.5	5.9	--
Deadline	6900	36	7.4	3/28	4.5	5.2	--
Galena	7300	48	8.8	4/1	4.9	--	--
Galena Summit	8795	48	5.8	4/1	1.8	--	--
Garfield Ranger Station	6554	36	5.2	3/28	3.8	5.2	2.8*
Howell Canyon	8000	46	11.5	3/27	3.6	--	--
Niggerhead	5450	36	10.1	3/29	8.0	6.5	6.6*
Patrick Ranch	5720	36	7.7	3/27	4.4	3.9	4.2*
Pole Creek Ranger Station	8330	48	12.7	3/27	6.6	7.0	4.9*
Sheep Hollow	6200	32	7.5	3/24	2.5	--	--
Sublett	6000	36	7.0	3/25	3.1	6.4*	--
Trapper Creek	5300	36	10.0	3/23	4.8**	6.4	--

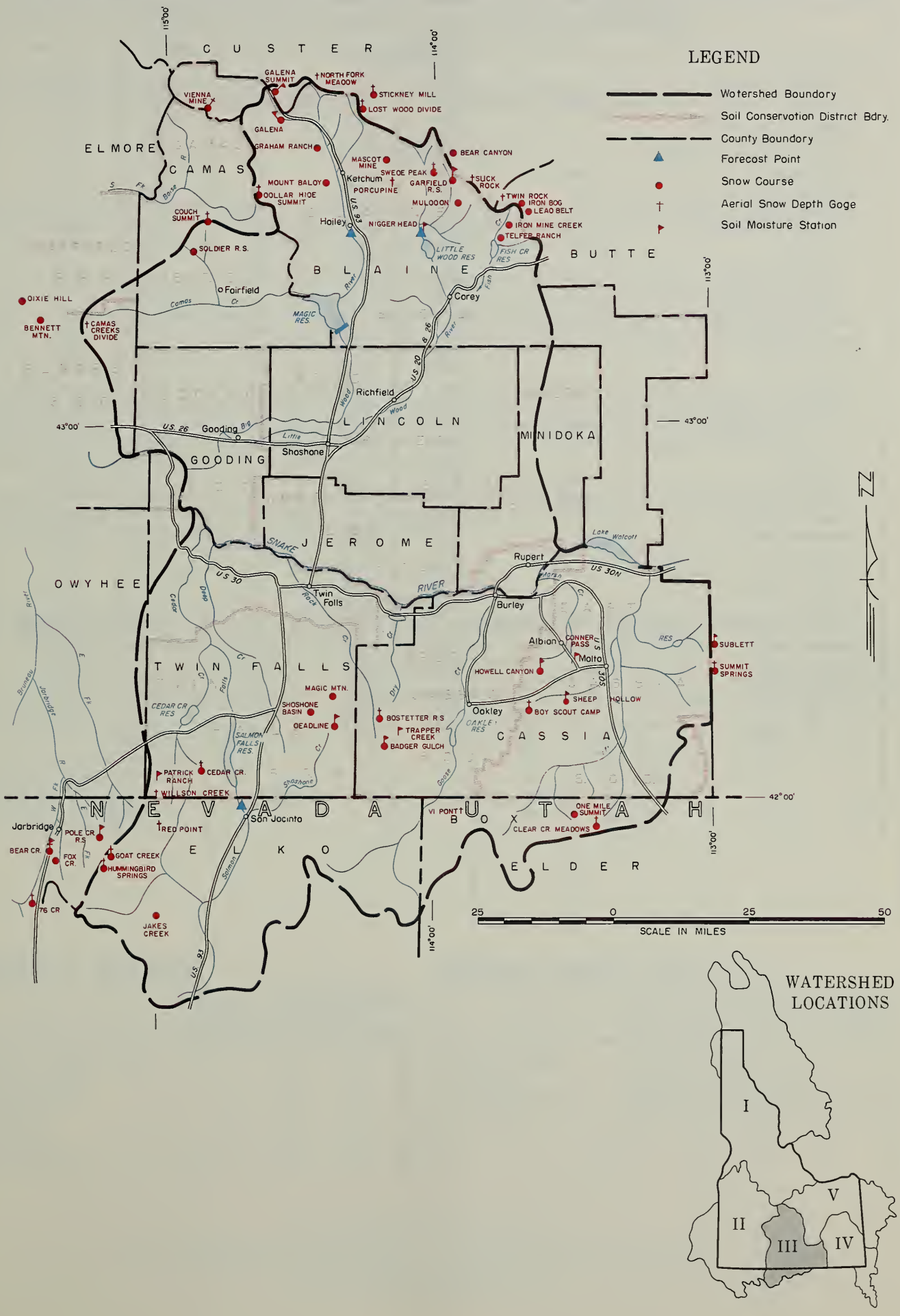
* March 1 Measurement.
** Last month's measurement should have been 4.2.
*** Total soil moisture. Not comparable to last year's published data.

SNOW

SNOW COURSE NAME		ELEVATION	CURRENT INFORMATION DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	PAST RECORD WATER CONTENT (Inches) LAST YEAR	1943-57 AVERAGE
Badger Gulch		6660	3/25	8	4.7	14.5	14.4*
Bear Canyon		8600	4/2	48	12.4	18.8	19.3*
Bear Creek	Nev.	7800	3/26	44	12.9	24.3	21.5*
Bennett Mountain		6650	4/2	24	8.6	20.3	--
Bostetter Ranger Station		7500	3/25	28	8.9	21.9	20.3
Boy Scout Camp		7600	3/24	33	9.3	16.7	19.8*
Camas Creeks Divide +		5720	4/2	0	0.0	12.3	--
Cedar Creek +		7000	3/26	T	T	9.8	12.1*
Clear Creek Meadows	Utah	9050	3/26	41	12.3	28.4	--
Couch Summit		7000	3/28	36	10.6	19.3	21.1*

**Estimated 1943-57 average. (+) Aerial observation, water content estimated. (a) Assuming normal meteorological conditions. (b) Actual or estimated 1943-57 average. (c) Observed flow corrected for storage in Jackson Lake and Palisades Reservoir. (d) Observed flow corrected for storage in Jackson Lake, Palisades, Island Park, Grassy Lake, Henry's Lake and diversions between Heise and Blackfoot. (e) Combined discharge of Big Wood River and Big Wood Slough. (**) 1949-1960 average.*

SNAKE RIVER, BIG WOOD, LITTLE WOOD, RAFT, GOOSE CREEK, SALMON FALLS CREEK WATERSHEDS



SNOW

SNOW COURSE NAME		ELEVATION	CURRENT INFORMATION: DATE OF SURVEY	CURRENT INFORMATION: SNOW DEPTH (Inches)	CURRENT INFORMATION: WATER CONTENT (Inches)	PAST RECORD: WATER CONTENT (Inches) LAST YEAR	PAST RECORD: WATER CONTENT (Inches) 1943-57 AVERAGE
Deadline		6900	3/28	38	9.6	27.4	24.8*
Dollarhide Summit		8700	3/25	49	16.8	25.5	28.1*
Fox Creek	Nev.	6800	3/26	6	1.4	12.9	9.1*
Galena		7500	4/1	53	14.2	19.2	20.2
Galena Summit		8795	4/1	71	19.4	24.2	25.2*
Garfield Ranger Station		6554	3/28	17	5.3	10.9	10.6*
Goat Creek	Nev.	8800	3/27	40	12.8	27.8	18.9*
Graham Ranch		6200	3/27	24	7.2	13.3	14.0
Howell Canyon		8000	3/25	40	12.3	29.3	28.2*
Hummingbird Springs	Nev.	8945	3/27	50	15.1	31.5	22.8*
Iron Bog		7650	3/25	19	6.2	15.2	--
Iron Mine Creek		6370	4/3	14	5.0	13.0	--
Leadbelt		6800	3/25	12	3.8	10.7	--
Little Camas Flat +		4950	4/2	0	0.0	7.2	--
Lost-Wood Divide +		8750	4/3	61	16.7	22.6	26.7*
Magit Mountain		6700	3/28	29	8.2	21.9	20.0
Mascot Mine		7900	3/26	30	9.6	15.8	17.0
Mount Baldy		9000	3/27	40	11.6	21.3	22.7*
Muldoon		6300	3/28	16	4.9	8.0	7.3*
North Fork Meadow +		8150	4/3	39	10.6	14.3	--
One Mile Summit	Utah	7330	3/26	14	4.8	8.7	--
Pole Creek Ranger Station	Nev.	8330	3/27	45	13.8	23.9	20.5*
Porcupine +		8350	4/3	45	12.9	21.6	--
Red Point +	Nev.	7940	3/26	6	1.8	15.2	--
Seventy-six Creek	Nev.	7100	3/27	11	3.9	17.3	15.7*
Sheep Hollow		6200	3/24	7	1.8	6.6	--
Shoshone Basin		5740	3/27	T	T	5.6	2.8*
Slickrock +		8640	4/3	45	12.3	16.9	--
Soldier Ranger Station		6100	3/28	6	2.3	13.3	12.0
Stickney Mill		7500	4/2	26	7.3	10.5	10.0
Sublett		6000	3/25	9	3.9	11.7	11.8*
Summit Springs		8500	3/25	8	2.6	9.0	10.8*
Swede Peak		7500	3/29	43	12.3	19.5	--
Telfer Ranch		6000	4/3	T	T	9.9	5.2*
Twin Rocks +		8100	4/3	35	11.4	17.5	--
Vienna Mine		8900	4/3	92	30.2	36.1	38.8*
Vi Pont +	Utah	7650	3/29	27	8.3	19.9	--
Wilson Creek +		7500	3/26	12	3.7	15.8	--

WATER SUPPLY OUTLOOK and SNOW SURVEYS
UPPER SNAKE, BLACKFOOT, PORTNEUF, BEAR, MALAD WATERSHEDS
IDAHO

as of
APRIL 1, 1963

GENERAL SUMMARY

The water supply outlook at the end of the snow accumulation season is poor except on the Snake and Blackfoot Rivers with good storage facilities. Snowfall and precipitation during March was below normal and forecasts in general have been lowered significantly.

Snow cover, in relation to normal, fell steadily throughout the month of March except for the last few days when a good storm occurred. This storm did not make up for the lack of snowfall during the entire month, but on the higher snow courses added over two inches of water. Most of the low and middle elevation snow courses are still the lowest ever measured at this time of the year. Snow cover varies from 40% on the Malad River to 58% on the Bear River.

Soil moisture at the middle and lower elevation snow courses picked up during March as the snow melted. These soils are now drying out with the snow entirely gone. The high elevation soil moisture sites still indicate unusually dry soil beneath the snow pack. This condition will drop streamflow early in the season and cut the total runoff for the year significantly. Forecasts in this area have been lowered on this basis.

Reservoir-stored water is excellent on the Snake and Blackfoot Rivers and can make up for most of the deficiency forecast in streamflow. The smaller rivers and streams in the area face the possibility of severe water shortages during 1963.

WATER SUPPLY OUTLOOK expressed as "Poor", "Foir" "Average" or "Excellent" and STREAMFLOW FORECASTS (1,000 Ac. Ft.) [a]

STREAM and/or FORECAST POINT	OUTLOOK	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE
Snake River nr. Heise		2500	Apr-Sep	4132	60
nr. Blackfoot		2540	Apr-Jul	4239	60
Blackfoot Reservoir Inflow		60	Apr-Sep	--	--
Portneuf River at Topaz		30	Mar-Sep	--	--
Bear River at Harer		90	Apr-Sep	299	30
Cub River nr. Preston		20	Apr-Sep	52*	38
Montpelier Creek nr. Montpelier		5	Apr-Sep	13.1	38

COMPARISON of SNOW COVER

RIVER BASIN WATERSHED	NO. OF COURSES AVERAGED	THIS YEARS SNOW WATER EXPRESSED AS PERCENT OF: LAST YEAR	AVERAGE [b]
Snake ab. Idaho Falls	25	51	55
Blackfoot River	4	46	52
Portneuf River	3	45	46
Mink Creek	4	38	40
Cub River	3	41	47
Malad River	2	29	40
Bear ab. Preston	20	50	58

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month) THIS YEAR	LAST YEAR	1943-57 AVERAGE
Jackson Lake	847.0	599.3	165.8	465.5
Palisades	1200.0	1074.4	681.3	--
American Falls	1700.0	1679.3	1690.5	1517.7
Bear Lake	1421.0	777.4	547.6	848.8

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SOIL MOISTURE

STATION NAME	ELEVATION	PROFILE (Inches) DEPTH	PROFILE (Inches) *CAPACITY	SOIL MOISTURE (Inches) DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Emigrant Summit	7350	36	8.2	3/26	3.3	3.4	--
Giveout Pass	7025	50	12.6	3/27	7.4	--	--
Jenson Ranch	6580	45	18.7	3/27	15.5	--	--
Lower Pebble	5800	36	7.6	3/25	5.9	7.9	--
Pebble Creek	6550	48	7.2	3/26	3.4	4.4	--
Strawberry Creek	5800	48	12.7	3/28	10.4	6.5	--

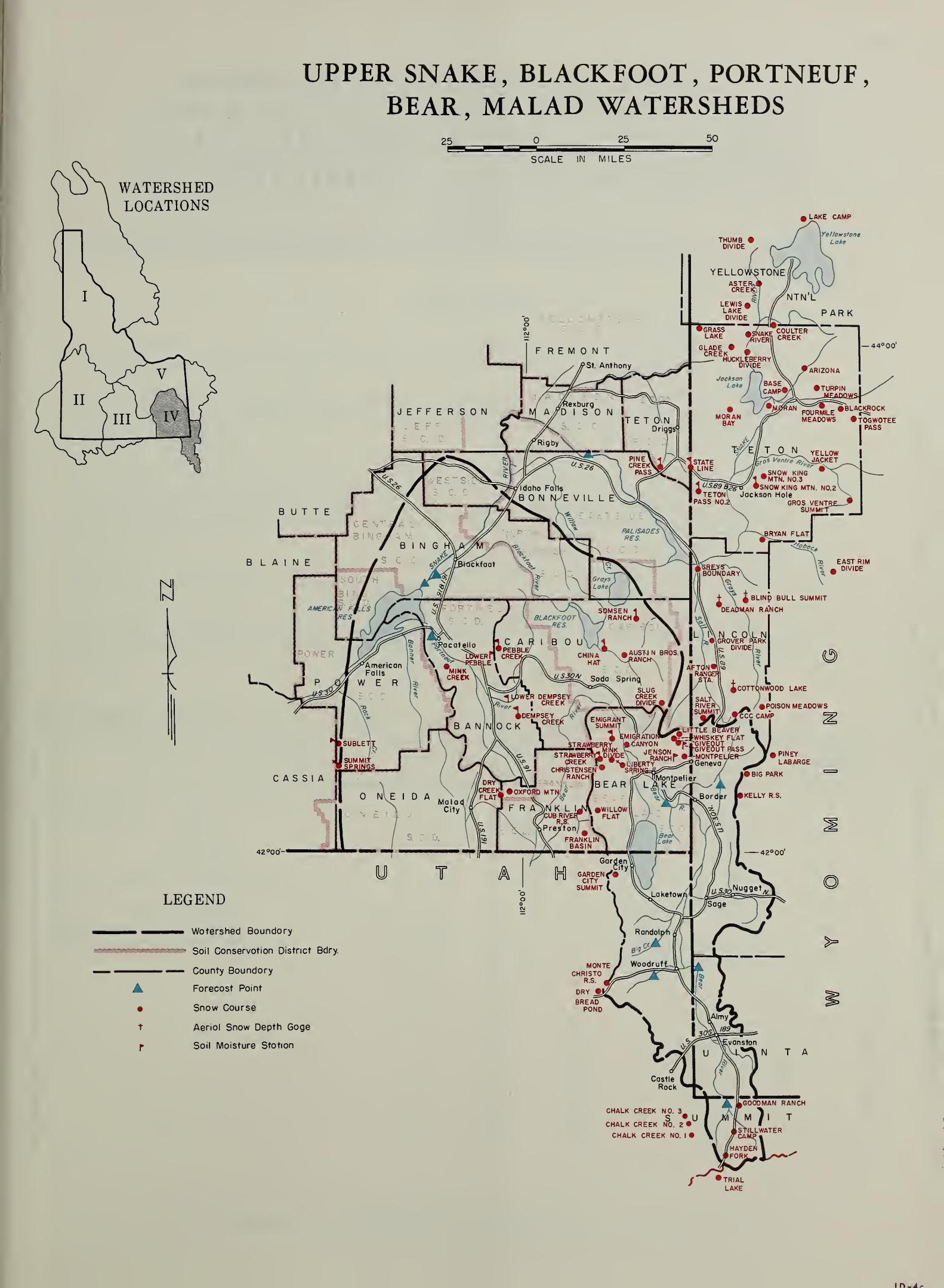
* Total soil moisture. Not comparable to last year's published data.

SNOW

SNOW COURSE NAME	ELEVATION	CURRENT INFORMATION DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	PAST RECORD WATER CONTENT (Inches) LAST YEAR	1943-57 AVERAGE
Austin Brothers Ranch	6450	3/29	Ice	1.5	10.2	8.3*
China Hat	6300	3/29	0	0.0	7.0	6.1*
Christensen Ranch	5600	3/27	0	0.0	9.9	8.7*
Cub River Ranger Station	5400	3/27	0	0.0	10.0	7.4*
Dempsey Creek	6280	3/25	20	6.7	11.3	11.6*
Dry Basin +	7900	3/30	58	20.8	--	--
Dry Creek Flat	6350	3/27	0	0.0	7.6	3.7*
Emigrant Summit	7700	3/26	49	16.8	27.2	25.7
Emigration Canyon	6300	3/26	18	7.2	12.2	10.7*
Franklin Basin	8200	3/29	61	21.1	32.0	29.2
Giveout	6850	3/27	21	7.8	17.7	--
Horseshoe Basin +	8000	3/30	58	20.8	32.1	--
Liberty Spring	8600	3/25	72	24.7	43.2	--
Little Beaver	7000	3/27	31	11.2	19.4	--
Mink Creek	6300	3/27	21	6.9	19.0	17.4*
Montpelier Creek	6600	3/27	8	4.0	10.7	--
Oxford Mountain	6800	3/27	13	4.8	9.0	8.2*
Pebble Creek	6550	3/26	16	6.3	13.6	14.5*
Slug Creek Divide	7225	3/28	33	13.2	19.2	16.8
Somsen Ranch	7000	3/29	27	8.0	12.7	12.8*
Strawberry Creek	5800	3/27	0	0.0	13.4	12.4*
Strawberry-Mink Divide	6800	3/26	26	11.5	24.6	23.3*
Sublett	6000	3/25	9	3.9	11.7	11.8*
Summit Springs	8500	3/25	8	2.6	9.0	10.8*
Whiskey Flat	6900	3/27	13	5.6	13.2	--
Willow Flat	6100	3/27	6	3.3	17.6	15.1*

**Estimated 1943-57 average. (o) Forecast made by Gregory L. Pearson, SCS, Salt Lake City, Utah. (+) Aerial observation, water content estimated. (a) Assuming normal meteorological conditions. (b) Actual or estimated 1943-57 average. (c) Observed flow corrected for storage in Jackson Lake and Palisades Reservoir. (d) Observed flow corrected for storage in Jackson Lake, Palisades, Island Park, Grassy Lake, Henry's Lake and diversions between Heise and Blackfoot.*

UPPER SNAKE, BLACKFOOT, PORTNEUF, BEAR, MALAD WATERSHEDS



WATER SUPPLY OUTLOOK and SNOW SURVEYS
UPPER SNAKE, HENRY'S FORK, TETON, CAMAS-BEAVER CREEK, LITTLE LOST, BIG LOST, UPPER SALMON WATERSHEDS
IDAHO

as of
APRIL 1, 1963

GENERAL SUMMARY

The outlook for streamflow varies from critical shortages on smaller rivers without adequate carry over, or storage facilities, to near normal on the larger rivers by using stored water.

Snow cover varies from 35 percent of normal on the Little Lost to 68 percent on the Upper Salmon River above Challis. Low elevation snow is almost entirely gone and south slopes are bare to the mountain tops. A good storm near the end of the month helped but did not change the general situation.

Soil moisture measurements show dry soil beneath the snow pack at high elevations. Valley soils are also drier than usual and, if rains do not occur soon, irrigation water will be needed to prepare seed beds. Forecasts have been lowered more than the snow pack would indicate because the soil is expected to absorb an unusually high proportion of water when the major snow-melt begins.

Reservoir-stored water on the main stem of the Snake River is excellent and can make up for most of the deficiencies in streamflow.

Water in general should be used conservatively to produce the most from available supplies this year. If storage facilities are available, strive to carry over as much as possible for the 1964 season, which could also be a low snowfall year.

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent" **and STREAMFLOW FORECASTS (1,000 Ac. Ft.)** [a]

STREAM and/or FORECAST POINT		OUTLOOK	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE
Snake at Moran (Natural Flow)		--	530	Apr-Sep	928	57
Snake River nr. Heise	*c*	Fair	2500	Apr-Sep	4132	60
Henry's Fork nr. Ashton	*d*	Fair	470	Apr-Sep	632	74
nr. Rexburg	*e*	Fair	920	Apr-Sep	1318	70
Teton River nr. St. Anthony		Poor	200	Apr-Sep	425	47
Big Lost River at Howell Ranch		Fair	120	Apr-Sep	199	60
			85	Apr-Jun	139	61
Big Lost River nr. Mackay	*f*	Fair	100	Apr-Sep	172	58
Little Lost River nr. Howe		Poor	22	Mar-Sep	37.5**	59
Salmon River nr. Challis		Poor	600	Apr-Sep	959	63
			520	Apr-Jul	839	62

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COMPARISON of SNOW COVER

RIVER BASIN WATERSHED	NO. OF COURSES AVERAGED	THIS YEARS SNOW WATER EXPRESSED AS PERCENT OF : LAST YEAR	AVERAGE b
Snake River ab. Heise	25	52	56
Henry's Fork	3	43	49
Teton River	2	48	49
Camas-Beaver Cr.	3	28	36
Little Lost River	5	37	35
Big Lost River	5	65	63
Upper Salmon River	5	74	68

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month) THIS YEAR	LAST YEAR	1943-57 AVERAGE
Jackson Lake	847.0	599.3	165.8	465.5
Palisades	1200.0	1074.4	681.3	--
American Falls	1700.0	1679.3	1690.5	1517.7
Island Park	127.0	133.4	104.3	120.2
Grassy Lake	15.2	11.9	8.9	13.2
Mackay	44.2	36.4	25.4	35.1

SOIL MOISTURE

STATION NAME	STATION ELEVATION	PROFILE (Inches) DEPTH	*CAPACITY	SOIL MOISTURE (Inches) DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Above Gilmore	8200	54	5.4	3/29	1.9	--	--
Bell Mountain Bar	6640	18	3.6	3/28	1.2	1.5	--
Big Flat	7050	18	3.6	3/29	1.2	1.1	--
Cedarville Bar	5400	18	3.0	3/28	1.0	1.9	--
Fairview Guard Station	5850	42	7.6	3/28	4.8	4.3	--
Island Park	6315	42	9.9	3/29	3.2	--	--
Meadow Lake	9100	48	4.4	3/29	1.7	--	--
Mill Creek Summit	8870	48	8.4	3/31	2.7	--	--
Nielson's Draw	6400	18	3.3	3/28	1.1	1.0	--
Pine Creek Pass	6750	48	13.3	3/28	4.1	--	--
State Line	6400	48	14.8	3/28	4.9	--	--
Teton Pass	8500	48	10.5	3/28	5.3	--	--
Valley View	6500	48	13.3	3/29	4.0	--	--
West Big Flat	6550	18	3.2	3/29	1.0	1.2	--
Wet Creek Summit	8175	48	17.1	3/27	6.1	--	--

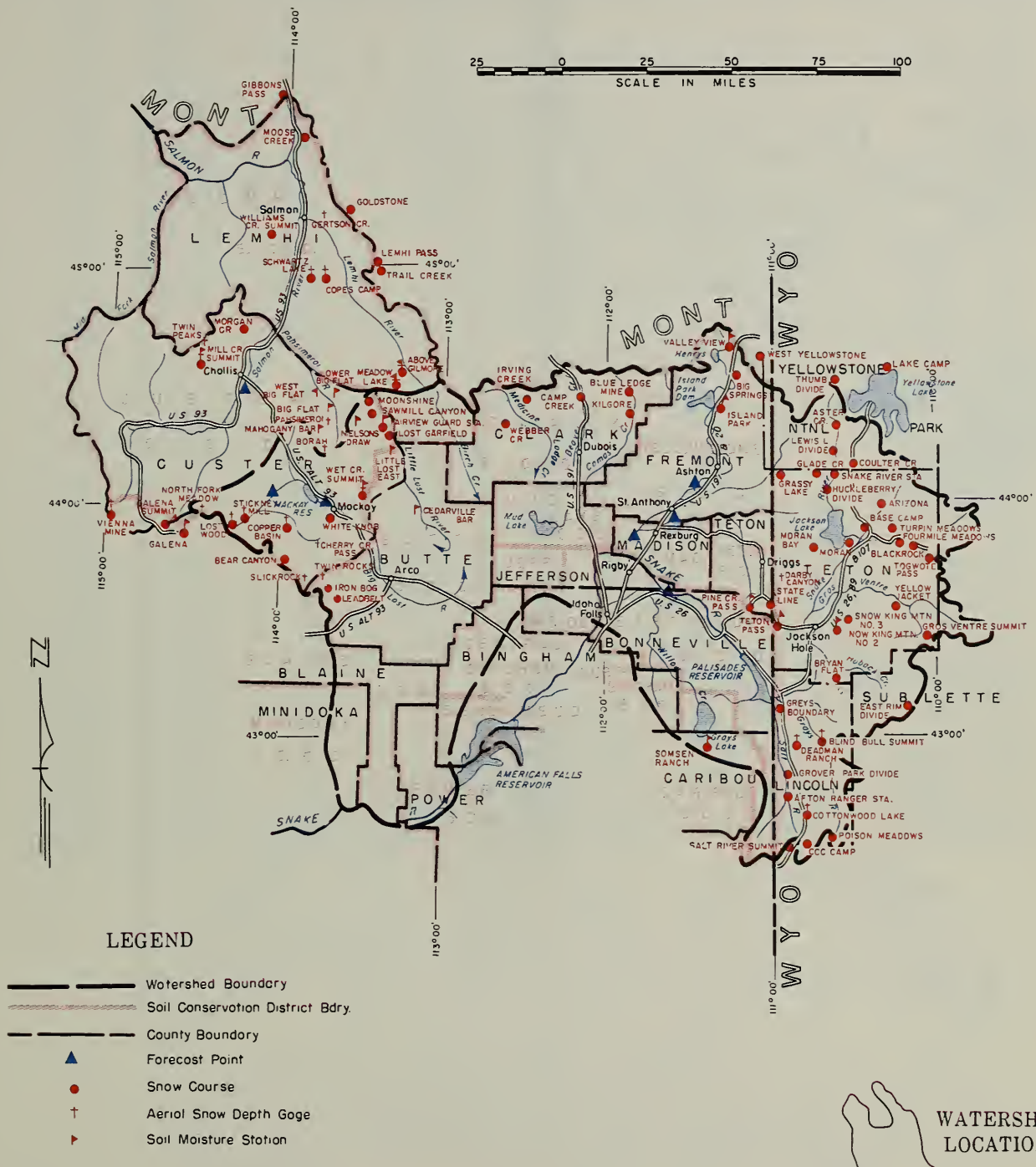
* Total soil moisture. Not comparable to last year's published data.

SNOW

SNOW COURSE NAME		SNOW COURSE ELEVATION	CURRENT INFORMATION DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	PAST RECORD WATER CONTENT (Inches) LAST YEAR	1943-57 AVERAGE
Above Gilmore		8200	3/29	29	7.0	9.9	--
Bear Canyon		8600	4/2	48	12.4	18.8	19.3*
Black Canyon		7850	3/27	67	20.2	--	--
Black Moose		8125	3/27	68	25.6	--	--
Big Springs		6500	3/29	32	10.4	25.6	23.6
Blue Ledge Mine		6700	3/27	25	7.2	22.5	17.3
Camp Creek		6800	3/27	8	2.3	12.1	10.4
Cherry Creek Pass +		8900	4/3	6	1.3	4.0	--
Copes Camp		7500	3/28	24	5.9	8.9	--
Copper Basin		8000	4/2	20	6.9	9.6	10.1
Darby Canyon +	Wyo.	8250	3/29	52	17.1	25.7	--

**Estimated 1943-57 average. (+) Aerial observation, water content estimated. (a) Assuming normal meteorological conditions. (b) Actual or estimated 1943-57 average. (c) Observed flow corrected for storage in Jackson Lake and Palisades Reservoir. (d) Observed flow corrected for storage in Island Park Reservoir and Henry's Lake. (e) Observed flow corrected for storage in Island Park Reservoir, Henry's Lake, Grassy Lake, and diversions between Ashton and Rexburg. (f) Observed flow corrected for storage in Mackay Reservoir and diversion in Sharp Ditch. (**) 1949-1960 average.*

UPPER SNAKE, HENRY'S FORK, TETON, CAMAS - BEAVER CREEK, LITTLE LOST, BIG LOST, UPPER SALMON WATERSHEDS

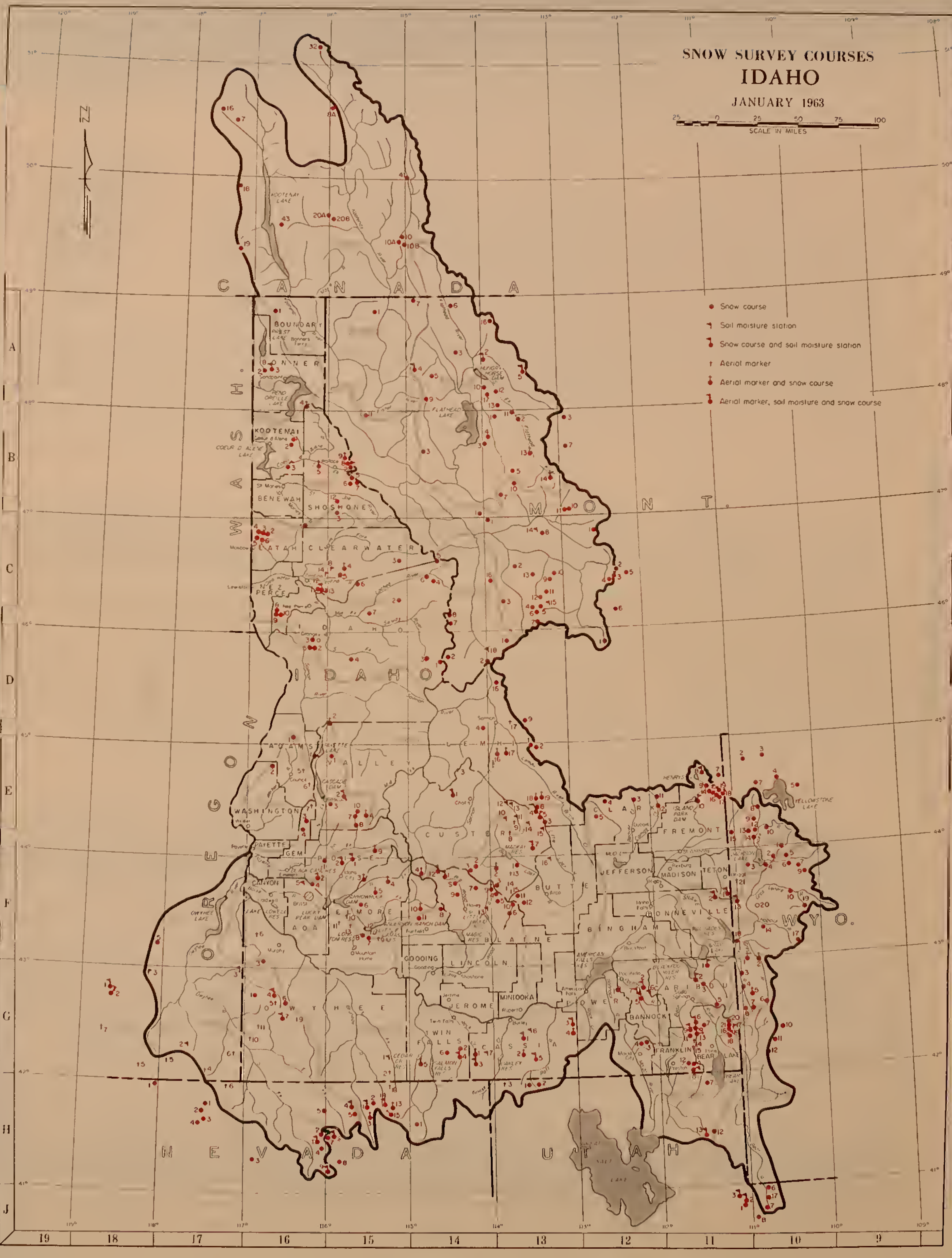


LEGEND

- Watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Course
- Aeriol Snow Depth Gage
- Soil Moisture Station

SNOW

SNOW COURSE NAME	ELEVATION	CURRENT INFORMATION: DATE OF SURVEY	CURRENT INFORMATION: SNOW DEPTH (Inches)	CURRENT INFORMATION: WATER CONTENT (Inches)	PAST RECORD: WATER CONTENT (Inches) LAST YEAR	PAST RECORD: WATER CONTENT (Inches) 1943-57 AVERAGE
Fairview Guard Sta.	6850	3/26	T	T	4.5	5.2*
Galena	7500	4/1	53	14.2	19.2	20.2
Galena Summit	8795	4/1	71	19.4	24.2	25.2*
Gertson Creek +	8050	3/28	9	2.2	9.2	--
Iron Bog	7650	3/25	19	6.2	15.2	--
Irving Creek	7035	3/29	5	1.2	5.4	--
Island Park	6315	3/29	30	8.8	20.3	17.8
Kilgore	6200	3/27	11	4.2	14.8	10.3
Latham Springs	7650	3/27	59	20.6	--	--
Leadbelt	6800	3/25	12	3.8	10.7	--
Lost-Garfield	6700	3/26	0	0.0	2.4	2.3*
Lost-Wood Divide +	8750	4/3	61	16.7	22.6	26.7*
Lucky Dog	6900	3/27	39	10.2	--	--
Meadow Lake	9100	3/29	48	12.9	22.5	--
Mill Creek Summit	8870	3/31	54	16.0	22.2	24.0
Moonshine	7250	3/26	21	5.4	10.8	12.1*
Moose Creek	6200	3/29	29	8.4	14.6	18.3
Morgan Creek	7580	3/26	32	9.0	--	--
North Fork Meadow +	8150	4/3	39	10.6	14.3	--
Old Road	7250	3/27	49	15.2	--	--
Pine Creek Pass	6750	3/28	36	9.8	19.0	--
Poacher's Cabin	8000	3/27	61	22.2	--	--
Sawmill Canyon	7000	3/26	13	3.6	8.7	9.2*
Schwartz Lake	8500	3/28	40	10.4	13.0	--
Slickrock +	8640	4/3	45	12.3	16.9	--
Somsen Ranch	7000	3/29	27	8.0	12.7	12.8*
State Line	6400	3/28	23	6.5	15.5	16.4
Stickney Mill	7500	4/2	26	7.3	10.5	10.0
Teton Pass Wyo.	8500	3/28	65	21.3	42.1	40.6*
Teton Pass Wyo.	8500	4/2	72	23.9	42.1	40.6*
Twin Peaks +	9190	4/3	68	20.1	--	--
Twin Rocks +	8100	4/3	35	11.4	17.5	--
Valley View	6500	3/29	35	9.0	19.4	16.4
Vienna Mine	8900	4/2	92	30.2	36.1	38.8*
Webber Creek	6700	3/29	3	0.6	5.4	--
West Yellowstone Mont.	6700	3/27	20	6.3	11.0	12.7
Wet Creek Summit	8175	3/27	20	5.2	11.7	12.2*
White Knob	7700	3/28	21	4.4	12.1	9.4
Williams Creek Summit	7800	3/29	31	8.0	13.7	15.0


SNOW SURVEY COURSES
IDAHO
JANUARY 1963
SCALE IN MILES
Snow course
Soil moisture station
Snow course and soil moisture station
Aerial marker
Aerial marker and snow course
Aerial marker, soil moisture and snow course
CANADA
MONT.
WASH.
OREGON
NEVADA
UTAH
WYO.
IDAHO
BOUNDARY
BONNER
KOOTENAI
BENEWAH
SHOSHONE
LATAH
CLEARWATER
NEZ PERCE
ADAMS
VALLEY
WASHINGTON
PAYETTE
GEM
BOISE
CANYON
ELMORE
ADA
OWYHEE
GOODING
LINCOLN
JEROME
MINIDOKA
TWIN FALLS
CASSIA
BLAINE
CUSTER
LEMHI
BUTTE
CLARK
FREMONT
JEFFERSON
MADISON
TETON
BONNEVILLE
BINGHAM
POWER
BANNOCK
CARIBOU
FRANKLIN
BEAR LAKE
ONEIDA

Index to IDAHO SNOW COURSES

NO.	STATE	NAME	SEC.	TWP. AS	AGE.	ELEV.
			LAT.	AND	LONG.	
		KOOTENAI RIVER				
15E12	M	Baree Creek	36	26N	31W	5500
14A W	M	Brush Creek	13	30N	26W	5000
1E	BC	Ferguson	50°47'		117°09'	2900
11	BC	Fernie	49°31'		115°01'	3500
"	BC	Gerrard	50°33'		117°01'	6000
43	BC	Gray Creek	49°07'		116°41'	5100
39B	BC	Kimberley	49°41'		115°59'	3830
1E	BC	Marble Canyon	50°12'		116°04'	6000
17B	BC	Morrissey Ridge	49°2[illegible]'		115°01'	6100
19	BC	Nelson	49°29'		117°14'	3050
11A	BC	Wes Fernie	49°3[illegible]'		114°52'	4100
1EAL	M	Red Mountain	[illegible]	36N	23W	6000
1E	BC	Sandon	[illegible]°49'		117°01'	3600
8A	BC	Sinclair Pass	50°[illegible]'		116°56'	4500
1eA1	I	Smith Creek	29	[illegible]N	3W	4500
20A	BC	Sullivan Mine	[illegible]°49'		116°01'	5100
1	BC	Upper Elk River	49°01'		114°56'	4200
1eA"	M	Weasel Divide	8	37N	24W	6450
		PRIEST RIVER				
1eA2	1	Benton Meadow	20	58N	4W	2344
16A3W	1	Benton Spring	3"	58N	3W	2400
		PEND OREILLE - CLARK FORK RIVER				
13E13	M	Black Pine	23	8N	15W	7[illegible]
12E5	M	Chessman Reservoir	9	8N	5W	6[illegible]
12E16	M	Copper Creek	1	15N	6W	4[illegible]
12E11	M	Cotter Mine	7	26N	6W	6[illegible]
13E17	M	Coyote Hill	12	28N	1W	2[illegible]
13E9	M	El Dorado Mine	23	8N	17W	7[illegible]
13E11	M	Fred Burr Pass	13	6N	4W	8[illegible]
13E15a	M	Georgetown Lake	6	5N	17W	6[illegible]
13E10	M	Gold Creek Lake	14	8N	12W	7[illegible]
1E1	M	Hoodoo Creek	7	11N	2W	4[illegible]
13E1	M	Interguard	6	5N	1W	6[illegible]
13E2	M	Lubrecht Forest	11	13N	14W	4[illegible]
13E1[illegible]	M	Lubrecht Forest	11	13N	15W	4[illegible]
13E7	M	North Fork Jocko	3	17N	17W	6[illegible]
12E1	M	Pipestone Pass	21	1S	7W	3[illegible]
13E12	M	Red Lion	2"	8N	13W	7[illegible]
13E2	M	Slide Rock Mountain	35	1[illegible]	14W	7[illegible]
13E5	M	Southern Cross	7	5N	13W	6[illegible]
12E13	M	Steeple Pass	16	13N	7W	6[illegible]
13E7	M	Storm Lake	14	1S	13W	7[illegible]
13E6	M	Stuart Mill	14	5N	13W	6[illegible]
12E7	M	Ternille Creek, Lower	13	8N	6W	6[illegible]
12E13	M	Ternille Creek, Middle	13	8N	6W	6[illegible]
12E1	M	Ternille Creek, Upper	14	8N	5W	8000
14E1	M	TT Mountain	33	15N	1W	6800
		BITTERROOT RIVER				
13E16	M	Ashroe	29	9N	18W	6875
1E11	M	East Fork Ranger Station	1[illegible]	2N	17W	5400
1E12	M	Gibbons Pass	4	2S	19W	7100
13E12a	M	Gibbons Pass	4	2S	1[illegible]W	7200
1E1"	M	Lost Horse	5	4N	23W	5[illegible]
1E12	M	Nezperce Camp	19	1S	23W	5[illegible]
13E3	M	Sawtooth Summit	30	6S	17W	7250
1E14	M	Twin Lakes	32	9S	22W	6[illegible]
		FLATHEAD RIVER				
13E14A	M	Basin Creek	11	19N	12W	5000
14E3	M	Bassoo Peak	11	24S	25W	5[illegible]
13E3	M	Big Creek	[illegible]	22N	18W	6750
17A17	M	Camp Misery	30	22N	18W	6400
13A2W	M	Desert Mountain	24	22S	17W	5600
13E4	M	Fatty Creek	4	22N	18W	5500
12E7	M	Goat Mountain	7"	22N	17W	7000
14A3	M	Griffin Creek Divide	14	28S	25W	5[illegible]
14A3	M	Hell Roaring Divide	35	32S	27W	6[illegible]
15E12A	M	Holtrock	18	21S	13W	4530
14A6	M	Kathernin	1[illegible]	37N	22W	3884
14A5	M	Logan Creek	24	30N	24W	4300
13A9W	M	Marias Pass	3[illegible]	30N	14W	5250
13A16	M	Mineral Creek	29	35N	17W	4000
13A13	M	Quintonkon	17	26N	17W	3800
12E2	M	Spotted Bear Mountain	23	29N	15W	7000
13A10	M	Strawberry Lake	11	28N	15W	6500
13E1	M	Trinkus Lake	9	24N	17W	6500
13A12	M	Trout Lake	21	28N	17W	3600
13E11	M	Twin Creeks	14	26N	16W	3520
13E5	M	Upper Holland	28	21N	16W	7000
12E3	M	Wrong Ridge	17	25N	17W	4200
		SPOKANE RIVER				
1E12	I	Above Burke	31	48N	5E	4100
1E27	I	Above Roland	35	47N	6E	4350
15E6	I	Below Roland	34	47N	6E	3700
1E22	I	Copper Ridge	6 & 7	50N	1W	4800
16E3W	I	South of Lily Summit	6	49N	1W	3100
16E1A	I	Kellogg Peak	19	48N	5E	5550
13E2W	I	Lookout	4	47N	6E	5250
16E1	I	Lower Sands Creek	32	51N	1W	3400
16A13	I	Mosquito Ridge	5	54N	4E	5100
15E12	I	Outlaw Creek	1[illegible]	47N	5E	3750
15E6A	I	Roland Summit	26	47N	6E	5200
15E1	I	Sherwin	28 & 33	42N	5E	3200
15E1A	I	Sunset	22	49N	5E	5600
		SNAKE RIVER - WYOMING				
15E4	WY	Afton Ranger Station	3[illegible]	32N	118W	6200
1[illegible]	WY	Arizona	3	44N	115W	6850
15E2	WY	Astor Creek	44°17'		110°38'	7700
10E2	WY	Base Camp	21	46N	113W	6600
10E7	WY	Blackrock	4	44N	111W	6600
8CE2A	WY	Button Bell	4	34N	115W	8750
10E14	WY	Bryan Flat	9	38N	114W	6450

NO.	STATE	NAME	SEC.	TWP. AS	AGE.	ELEV.
			LAT.	AND	LONG.	
13E1	WY	Canyon	44°44'		111°03'	7[illegible]
10E7	WY	CCC Camp	9	39N	118W	7[illegible]
10A6A	WY	Cottonwood Lake	25	31N	118W	7500
10E13	WY	Coulter Creek	44°00'		111°33	7600
10E1A	WY	Deadman Ranch	26	34N	116W	6634
10E17	WY	East Rim Divide	32	37N	111W	7950
10E6	WY	Four Mile Meadows	35	45N	117W	7[illegible]
10E11	WY	Glade Creek	12	42N	116W	7200
10E15	WY	Greys Boundary	33	39N	119W	6800
10E19	WY	Grove Centre Summit	36	43N	111W	8750
10E3	WY	Grover Park Divide	27	33N	118W	7500
10E14	Wy	Huckleberry Divide	32	48N	115W	7300
10E	WY	Lake Camp	44°34		111°02'	7850
10E9	WY	Lewis Lake Divide	44°13'		11[illegible]°02'	7900
12E	WY	Moran	6 & 1[illegible]	45N	114W	6800
10E3	WY	Moran Bay	14	45N	116W	6800
11E	WY	Morrie Basin	44°44'		111°42'	7500
10A6	WY	Poison Meadows	29	30N	116W	8500
10E8	WY	Salt River Summit	32	43N	118W	7900
10E12	WY	Snake River Station	9	38N	115W	6780
1[illegible]E20	WY	Snow King Mountain #3	4	41N	117W	7600
1 E6	WY	Sylvan Pass	12	52N	11[illegible]W	7100
1[illegible]E	WY	Thumb Divide	44°02'		111°05'	7900
1 E9	WY	Togwotee Pass	9	[illegible]W	110W	9600
10E5	WY	Turpin Meadows	1[illegible]	45N	111W	6930
1 E1	WY	Yellowjacket	33	42N	11[illegible]W	7650
		HENRYS FORK RIVER				
11E6	I	Big Springs	34	14N	44E	6560
11E1[illegible]	I	Black Canyon	11	13N	45E	7[illegible]
11E1[illegible]	I	Buins Meadow	33	14N	45E	8[illegible]
11E15	WY	Grassy Lake	[illegible]	48N	117W	7230
11E10	I	Island Park	20	13N	43E	6315
11E16	I	Latham Springs	9	13N	45E	7650
11E1[illegible]	I	Lucky Dog	2	13N	45E	6900
11E17	I	Poacher's Cabin	11	13N	45E	8000
11E2	I	Valley View	7	15N	44E	6500
11E	M	West Yellowstone	3[illegible]	13S	5E	6700
		TETON RIVER				
15E21A	WY	Darby Canyon	29	43N	119W	6850
11E2W	I	Pine Creek Pass	2[illegible]	3N	44E	6750
11E1W	I	Stake Line	3[illegible]	3N	46E	6[illegible]
10E13W	WY	Teton Pass	2[illegible]	41N	117W	8500
		CAMAS - BEAVER CREEK				
11E21	I	Blue Lodge Mine	27	1[illegible]N	[illegible]E	6700
12E3	I	Camp Creek	21	13N	3[illegible]E	6800
11E12	I	Kilgore	6	14N	39E	6200
		MEDICINE LODGE CREEK				
12E4	I	Irving Creek	8	13N	33E	[illegible]35
12E5	I	Webber Creek	23	12N	32E	6700
		BLACKFOOT RIVER				
.10[illegible]	I	Austin or Shere Ranch	4[illegible]	[illegible]	43E	6450
11E2M	I	Chimney Rock	17	7S	42E	6[illegible]
11E6	I	Dry Creek Divide	15	10S	44E	6[illegible]25
11E1M	I	Tomsen Ranch	25	5S	43E	[illegible]
		PORTNEUF RIVER				
12E6M	I	Dempsey Creek	17	10S	38E	6780
12E7[illegible]	I	Lower Dempsey	5	10S	[illegible]E	5[illegible]0
12E[illegible]	I	Lower Pebble	7	8S	34E	5800
12E1	I	Mink Creek	33	7S	34E	6300
12E2M	I	Pebble Creek	34	7S	37E	655
		RAFT RIVER				
13E2A	I	Boy Scout Camp	12	14S	23E	7600
13E2A	I	Clear Creek Meadows	26	14S	24E	7650
13E[illegible]	I	Conner Pass	35	12S	25E	5700
13E1[illegible]	I	Lowell Canyon	2	13S	24E	6000
13E1	O	Nine Mile Summit	19	14N	14W	7330
13E2M	I	Sheep Hollow	4	14S	24E	6[illegible]0
13E2M	I	Soblett	8	12S	30E	6000
13E1A	I	Summit Springs	15	13S	3[illegible]E	8500
		GOOSE - TRAPPER CREEK				
14E3M	I	Badger Gulch	24	15S	19E	6660
14E1A	I	Bostetter Ranger Station	35	14S	19E	7500
14E7A	I	Trapper Creek	2	15S	20E	5300
13E1e	O	Ski Point	17	14N	17W	7670
		SALMON FALLS CR. - BRUNEAU RIVER				
15E1MA	M	Bear Creek	31	46N	9[illegible]E	7800
14E7A	I	Cedar Creek	25	15S	13E	7000
14E4M	I	Deadline	25	14S	18E	6900
15E2	M	Fox Creek	33	46N	5[illegible]E	6800
15E.3A	M	Goat Creek	31	44N	6[illegible]E	8800
15E15A	M	Hummingbird Springs	6	45N	6[illegible]E	8945
14E1	M	Jakes Creek	6	42N	6[illegible]E	7000
14E2	I	Magic Mountain	14	14S	18E	6700
15E1[illegible]	I	Patrick Ranch	23	15S	12E	8720
15E1A	M	Pole Creek Ranger Station	13	46N	9[illegible]E	8330
15E1[illegible]	M	Red Point	15	47N	61E	7940
15E3A	M	Seventy Six Creek	6	44N	8[illegible]E	7100
14E6	I	Shoshone Basin	24	14S	17E	5740
15E2a	I	Wilson Creek	24	16S	12E	7500
		LITTLE LOST RIVER				
13E16[illegible]	I	Cedarville Par	31	7N	28E	5400
13E5M	I	Fairview Guard Station	27	12N	26E	6750
13E15e	I	Little Lost East	36	11N	26E	6640
13E3	I	Lost-Garfield	3	11N	26E	6600
13E6	I	Moonshine	31	13N	26E	7450
13E14a	I	Nieleon'e Draw	26	11N	25E	6400
13E4	I	Sawmill Canyon	17	12N	26E	6900
13E7MA	I	Wet Creek Summit	15	8N	25E	8175

NO.	STATE	NAME	SEC.	TWP. AS	AGE.	ELEV.
			LAT.	AND	LONG.	
		BIG LOST RIVER				
13F3	.	Bear Canyon	[illegible]	5N	21E	8650
13E13a	I	Cherry Creek Pass	2	5N	23E	8400
13E2A	I	Copper Basin	14	6N	21E	8000
13F11	I	Iron Box	23	4N	24E	7650
13F1[illegible]	I	Leadbelt	34	4N	23E	6800
13E3A	I	Lost Wood Divide	19	6N	19E	8[illegible]0
14E1[illegible]	I	North Fork Meadow	2	7N	18E	8[illegible]
13E14a	I	Slickrock	17	4N	22E	8[illegible]
14E2A	I	Stickney Mill	4	6N	19E	7[illegible]0
13E[illegible]	I	Twin Rocks	22	4N	22E	8100
13F1	I	White Knob	25	7N	23E	7700
		BIG WOOD RIVER				
14E8A	I	Dollar Hide Summit	16	3N	15E	8620
14E1M	I	Galena	3	6N	15E	7300
14E12M	I	Galena Summit	33	7N	15E	8[illegible]5
14E5	I	Graham Ranch	35	5N	17E	6200
14E7	I	Mascot Mine	8	4N	20E	7900
14E9	I	Mount Baldy	26	4N	17E	9000
14E11	I	Soldier Ranger Station	19	2N	14E	6100
		LITTLE WOOD RIVER				
13[illegible]N	I	Garfield Ranger Static[illegible]	11	3N	21E	6654
13[illegible]	I	[illegible]rth Mine Creek	32	3N	23E	6[illegible]
13E5	I	Muldoon	[illegible]	3N	21E	6[illegible]0
14E13a	I	Muggerhead	[illegible]	2N	24E	5[illegible]
14E[illegible]	I	Porcupine	3	4N	[illegible]E	8[illegible]
13E4A	I	Shade Peak	[illegible]	3N	21E	7[illegible]
13E[illegible]	I	Telfer Ranch	1[illegible]	2N	22E	6000
		BOISE RIVER				
15E4A	.	Atlanta Summit	29	5N	1[illegible]E	50[illegible]
15E2M	I	Bad Bear	35	7N	6E	550[illegible]
15E[illegible]	.	Bennett Mountain	[illegible]	2S	9E	6[illegible]
16E4	I	Bogus Basin Road	34	5N	[illegible]E	5360
16E15a	I	Bogus Basin Road	36	5N	2E	6[illegible]0
15E[illegible]	I	Camas Creeks Divide	11	3S	9E	5[illegible]0
14E13A	I	Golden Summit	9	2N	1[illegible]E	6[illegible]
15E13a	I	Dunnain	1	1N	7E	[illegible]50
1[illegible]	I	Deadman Gulch	24	7N	3E	6[illegible]
15[illegible]	I	Dixie Hill	13	2S	8E	4200
15E7A	I	Harkson Peak	[illegible]	8N	4E	[illegible]000
15E12a	I	Little Queen Fle'	21	1S	9E	4[illegible]0
15E13a	I	Lucy [illegible]	19	1S	8E	4550
15E1M	I	Monroe Creek Summit	17	7N	7E	6100
15E	I	Prairie	13	2N	7E	5600
15E3A	.	Road Creek	5	5N	8E	6[illegible]
15E4A	I	Trinity Mountain	7	3N	9E	7400
15E12a	I	Willow Creek Cabin	26	1N	4E	471[illegible]
		OWYHEE RIVER				
16E6	I	Antelope Ridge	[illegible]	8S	1E	[illegible]00
1[illegible]5	I	Warren Valley	2	27S	[illegible]E	[illegible]
1[illegible]A	A	Battle Creek	1	11S	1E	[illegible]
15[illegible]M	N	Big Bend	9	45N	5[illegible]E	6[illegible]
1[illegible]	.	Blue Mountain Pass Reservoir	4	38S	42E	[illegible]
16[illegible]	.	Bull Basin	[illegible]	12S	[illegible]E	[illegible]
1[illegible]	N	Bruneau Peak	8	47N	3[illegible]E	6[illegible]
1[illegible]A	.	Cabin Creek	[illegible]	33S	3[illegible]	7[illegible]
15[illegible]	N	Dry Canyon	[illegible]	[illegible]N	5[illegible]	[illegible]
14[illegible]	N	Gold Creek	3[illegible]	45N	[illegible]E	[illegible]
1[illegible]	N	Granite Peak	[illegible]	44N	5[illegible]	[illegible]
16[illegible]	.	Hyde Pasture	5[illegible]1	8S	[illegible]E	[illegible]
16E4	N	Jacks Peak	28	42N	5[illegible]E	8[illegible]
1[illegible]	.	Jordan Valley	[illegible]	30S	4[illegible]	4[illegible]
14[illegible]	N	Laurel Draw	[illegible]	45N	5[illegible]E	6[illegible]
1[illegible]	.	Lookout Butte	[illegible]	40S	47E	5[illegible]
1[illegible]	O	Louie Canyon	[illegible]	40S	4[illegible]	6[illegible]
17E[illegible]	N	Lower Buckskin	25	45N	3[illegible]E	6[illegible]
16E1M	N	Lower Jack Creek	1[illegible]	[illegible]N	53E	[illegible]
17E3	N	Martin Creek	1[illegible]	[illegible]N	53E	670[illegible]
16E3	N	Mikes	18	3[illegible]	4[illegible]	7[illegible]
16E7M	I	Mud Flat	34	9S	[illegible]E	6500
17E[illegible]	.	Oregon Canyon	[illegible]	4S	4[illegible]	6[illegible]
1[illegible]	N	Quinn Ridge	9	47N	41E	6300
1[illegible]	.	Red Canyon	32	11S	4W	6950
15E[illegible]	N	Roder Flat	3[illegible]	43N	53E	6800
1[illegible]	I	Silver City	[illegible]	5S	3W	6400
1[illegible]MA	O	Silvies	35	32S	33E	6900
16E1	.	South Mountain	35	7S	5W	6340
16E[illegible]	I	Succor Creek	25	3S	5W	6100
15E[illegible]	N	Taylor Canyon	35	39N	53E	6[illegible]0
15E8	N	Tremewan Ranch	9	39N	55E	5700
16E[illegible]	I	Triangle	NW 25	9S	3W	5150
1E[illegible]	.	Trout Creek	10	41S	38E	7800
17E[illegible]	W	Upper Buckskin	11	45N	3[illegible]	7[illegible]
1[illegible]	N	Upper Jack Creek	[illegible]	42N	53E	7250
18E7a	O	Wall Lake	31	35[illegible]	32 3/4E	6[illegible]
		PAYETTE RIVER				
15E2M	A	Big Creek Summit	24	15N	4E	6[illegible]
15E2M	I	Bogus Basin	16	5N	3E	6120
15E3	I	Cozy Cove	19	11N	7E	5[illegible]
15E3	I	Crawford Ranger Station	21	14N	4E	4[illegible]
15E10	I	Deadwood Airstrip	8	11N	7E	5440
15E7	I	Deadwood River Dam	8	11N	7E	5[illegible]
15E[illegible]	I	Deadwood Summit	23	14N	7E	7[illegible]
16E7a	I	Greenfield Flat	1	13N	2E	7370
16E4	I	High Valley Summit	9	10N	2E	5170
15E1	I	Lake Fork	3	18N	4E	6[illegible]
16E1	I	Rock Flat Summit	1	18N	4E	4[illegible]
15E2A	I	Squaw Meadow	5	21N	4E	5800
14E3	I	Tripod Summit	17	11N	3E	5[illegible]
		WEISER RIVER				
16E1	I	Boulder Creek	15	20N	1W	5500
16E6a	I	Mica Ridge	15	15N	2E	6800
16E5a	I	Squaw Flat	32	17N	2E	6230
16E2	I	Placer Creek	15 & 16	17N	[illegible]W	6000

NO.	STATE	NAME	SEC.	TWP. AS	AGE.	ELEV.
			LAT.	AND	LONG.	
		SALMON RIVER				
13E19A	I	Above Wilmore	13	13N	26E	8200
13E11a	I	Big Flat	[illegible]	11N	23E	7[illegible]
13E8a	I	Borah	21	10N	23E	8[illegible]
16D2	I	Chapman Creek	16	24N	2E	4[illegible]
13E17A	I	Copes Camp	35	18N	22E	7[illegible]
13D17a	I	Dortch Creek	22	22N	23E	8[illegible]
13D9	M	Gold Stone	21	8S	[illegible]E	8100
16D3	I	Johns Creek	[illegible]	24N	1E	3[illegible]
13E1	M	Lemhi Pass	[illegible]	10S	19W	7[illegible]
13E13a	I	Lower Big [illegible]e'	3[illegible]	12N	24E	6500
13E10a	I	Mahogany Bar	1	1[illegible]N	23E	7200
13E18A	I	Meadow Lake	24	13N	26E	9100
14E1MA	I	Mill Creek Summit	6	13S	17E	8[illegible]
13D16	I	Moose Creek	22 & 26	20N	21E	6200
13E9a	I	Panteimeroi	7	10N	24E	7500
13E16A	I	Schwartz Lake	34	18N	22E	8500
13E2	M	Trail Creek	5	10S	19W	7200
14E3a	I	Twin Peaks	22	15N	17E	9[illegible]
14E4A	I	Vienna Mine	32	6N	14E	8700
13E12a	I	West Big Flat	35	12N	23E	6550
14D5	I	Whitebird Summit	17	24N	2E	4300
14D4	I	Williams Creek Summit	34	24N	20E	7800
		CLEARWATER RIVER				
.4E11	I	Above Greer	14	35N	2E	1240
15E1a	I	[illegible]on	11	35N	3E	3100
15E3	I	Cayuse Airstrip	4	38N	11E	3700
15E7	I	Centerville Mountain	32	33N	8E	6200
15E2	I	Flat Lake Airstrip	35	35N	11E	5000
15E6a	I	[illegible]ad	16	36N	5E	3450
16E4	I	Forest	1	32N	3W	4550
15E9	I	Fortyone Meadows	6	43N	5E	5000
16E1a	I	Greer Summit	13	35N	2E	3000
15E6	I	Hemlock Butte	12	36N	6E	5500
14E3	.	Kit Carson Pasture	4	27N	16E	4700
14E5	M	Lolo Pass	11	10N	24W	5230
16E8	I	McGuire	25	33N	7W	4300
16E12M	I	Midway	14	35N	2E	2200
14E1	M	Nezperce Pass	25	1S	24W	6575
15E4	I	Orogrande Mountain	24	27N	6E	7[illegible]0
15E5	I	Pierce Ranger Station	4	36N	4E	3171
14E6	I	Powell Ranger Station	33	3[illegible]	1[illegible]E	4230
14E[illegible]	I	Savage Pass	[illegible]	36N	14E	6600
14E[illegible]A	I	Shanghai Summit	7	3[illegible]	0E	4600
16E1[illegible]	I	Syrene[illegible]	[illegible]	38N	4W	[illegible]35
		PALOUSE RIVER				
1E[illegible]	I	Armar[illegible]e Creek	44	[illegible]N	5W	3500
16E3	I	East Twin	13	4N	6W	4000
16E4	I	Howard Creek	1[illegible]	40N	5W	3500
16E2	I	Moscow Mountain	18	40N	4W	4800
1E[illegible]	.	West Twin	1[illegible]	[illegible]N	5W	4200
		BEAR RIVER				
1E[illegible]	Wy	Big Piney	[illegible]	27N	117W	8700
11E11	I	Carlet[illegible]on Ranch	[illegible]	13S	[illegible]E	5600
11E12	I	Cub River Ranger Statio[illegible]	[illegible]	15S	[illegible]E	5[illegible]0
11E13MP	U	Dry Bread Pond	19	8N	[illegible]E	8230
11E3M	I	Emigrant Summit	21	12S	[illegible]E	7350
11E	I	Emigrant[illegible] canyon mouth]	2[illegible]	12S	[illegible]E	6500
11E2M	I	Franklin [illegible]ain	1	16S	[illegible]E	8000
11H7P	I	Harden [illegible]ay Summit	35	14N	[illegible]E	7600
13E[illegible]	I	Goodman Ranch	19	3N	10E	7900
15E7	U	Hayden Mtn	1	1S	[illegible]E	9300
1[illegible]2	Wy	Kelly Ranger Station	13	26N	118W	8200
11H12P	U	Monte Cristo R. S.	3	8N	[illegible]E	8460
10E10	W	Piney LaBarge x	19	27N	111W	8820
10J17P	U	Stillwater Camp	32	2N	10E	8550
11E10	I	Strawberry Mtn Divide	14	13S	41E	6600
11E7M	I	Strawberry [illegible]reek	9	13S	41E	5800
11E4P	I	Willow Flat	2	14S	41E	6100
		MALAD RIVER				
12[illegible]	I	Dry Creek Flat	31	13S	37E	6350
1E[illegible]	I	Oxford Mountain	32	13S	37E	6800
		MONTPELIER CREEK				
11E16	I	Bloomcat	35	11S	45E	6840
11E17a	I	Diveout Pass	2	12S	45E	7020
11E19a	I	Jensen Ranch	15	12S	45E	6580
11E20	I	Little Beaver	26	11S	45E	6[illegible]0
11E1M	I	Montpelier Creek	22	11S	45E	6[illegible]0
11E21	I	Whiskey Flat	26	11S	44E	6[illegible]5

LEGEND

Numbering System (example)

10J1	SNOW COURSE ONLY.
10J1P	SNOW COURSE AND PRECIPITATION GAGE.
10J1M	SNOW COURSE AND SOIL MOISTURE STATION
10J1A	SNOW COURSE AND AERIAL MARKER.
10J1M1	SNOW COURSE, SOIL MOISTURE STATION AND AERIAL MARKER.
10J1MP	SNOW COURSE, SOIL MOISTURE STATION AND PRECIPITATION GAGE.
10J2M	SOIL MOISTURE STATION ONLY
10J2O	AERIAL MARKER ONLY.
10J2P	STORAGE PRECIPITATION GAGE ONLY

Agencies Assisting with Snow Surveys, etc.

GOVERNMENT AGENCIES

Canada:

- Department of Lands, Forests, and Water Resources, British Columbia
- Department of Resources and Development, Water Resources Division

States:

- Idaho State Reclamation Engineer and Corps of State Watermasters
- State of Idaho Department of Fish and Game
- University of Idaho
- Idaho State College
- Montana Agricultural Experiment Station
- Montana State Water Conservation Board
- Nevada Cooperative Snow Surveys
- Oregon Agricultural Experiment Station
- Oregon State Engineer and Corps of State Watermasters
- Utah Cooperative Snow Surveys
- Wyoming Cooperative Snow Surveys

Federal:

- U. S. Army Engineers
- U. S. Department of Agriculture
  - Forest Service
  - Agricultural Research Service
- U. S. Department of Commerce
  - Weather Bureau
- U. S. Department of the Interior
  - Bonneville Power Administration
  - Bureau of Reclamation
  - Fish and Wildlife Service
  - Geological Survey
  - Indian Service
  - National Park Service
  - Bureau of Land Management

PUBLIC UTILITIES

- The Montana Power Company
- Washington Water Power Company
- Idaho Power Company
- Utah Power and Light Company

ORGANIZED PUBLIC AGENCIES

- Big Lost River Irrigation District
- Boise Project Board of Control
- Little Wood River Irrigation District
- Jordan Valley Irrigation District
- Salmon Falls Creek Irrigation Company
- Twin Falls Soil Conservation District
- Twin Lakes Irrigation Company
- Big Wood Irrigation Company
- Owyhee Project - North & South Board of Control

PRIVATE CORPORATIONS

- Amalgamated Sugar Company

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

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